

FINANCIAL CONTRACTING IN CLOSELY HELD FIRMS:
EVIDENCE FROM THE MEDIA AND ENTERTAINMENT INDUSTRIES

By

C. EDWARD FEE IV

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C. Edward Fee IV

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Chairman: Christopher James

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A growing theoretical literature in finance deals with contracting issues in closely held firms. Among the issues addressed are the roles that outside blockholders and product markets serve in resolving manager/investor conflicts. This dissertation empirically addresses these questions in the context of the media and entertainment industries. The institutional features of these industries, including high degrees of private benefits and importance of managerial effort, make them uniquely suited to the task.

Chapters 2 and 3 of this dissertation examine the question of when might an entrepreneur increase a project's value by foregoing intensive outside monitoring and instead retaining control. Recent literature suggests that problems may arise if an entrepreneur cedes control of a project in which potential private non-pecuniary benefits of control are high. In some cases, outside investors may exploit their position of power

to destroy these private benefits ex post. The threat of investor opportunism may then reduce the entrepreneur's incentive to invest personal effort into the firm.

Chapter 2 examines the financing decisions of filmmakers in light of the above argument, which is theoretically modeled in Chapter 3. Motion picture producers face the choice of financing through a studio (and giving up control) or using independent finance (and retaining control). Consistent with theoretical predictions, I find that productions in which private benefits of control are high and in which filmmaker effort are important are more likely to be independently financed. Also examined is the role that reputation plays in the financing decision.

High levels of managerial control, perhaps because of the arguments outlined above, have traditionally been characteristic of the newspaper industry. Chapter 4 investigates the extent to which a competitive product market may serve as a substitute disciplining mechanism in that industry. This chapter examines management turnover in the 50 largest newspaper markets from 1950 to 1994 and finds significantly higher levels of management turnover in competitive markets than in monopolistic ones. Among the explanations investigated are relative performance evaluation, managerial technology, and strategic contracting.

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CHAPTER 2

THE COSTS OF OUTSIDE EQUITY CONTROL: EVIDENCE FROM MOTION PICTURE FINANCING DECISIONS

Increased shareholder activism has traditionally been viewed as a benefit of concentrated outside equity. Shleifer and Vishny (1986), for example, argue that ownership concentration may increase firm value by increasing the incentives of outsiders to monitor and control management. The empirical literature on the actions of large blockholders seems to support this view. For example, Bethel, Liebskind, and Opler (1998) find that asset divestitures increase following block share purchases. Additionally, Denis, Denis, and Sarin (1997) find a significant correlation between management turnover and the presence of a large blockholder.¹ Outside equity influence is perhaps most prevalent in the relationship between venture capitalists and the firms they finance. Venture capitalists, like large blockholders in public companies, tend to hold board seats on the firms in which they invest (Barry, Muscarella, Peavy, and Vetsuypens, 1990) and are important in removing poorly performing managers (Lerner, 1995). Additionally venture capitalists are reputed to bring expertise as well as capital to their relationships through on-location monitoring and advising (see Sahlman, 1990).

¹ In the Shleifer and Vishny (1986) model, large shareholders play a role in limiting free-rider problems in takeovers as well as in directly controlling management. Identifying the direct monitoring benefits of large shareholders separately from their role in takeovers is often difficult. Since takeovers are not an issue for the firms in my sample, this paper is able to focus on the direct monitoring role of large investors in isolation from the market for corporate control.

Recent theoretical work (Aghion and Bolton, 1992; Burkhardt, Gromb, and Panunzi, 1997; Hart, 1995; Pagano and Röell, 1998; Myers, 1996, among others) has pointed out that with the benefits of concentrated outside ownership come hidden costs, especially in small developing companies whose values are closely tied to the actions of an entrepreneur. Large outside investors may be able to exercise their control to the detriment of the entrepreneur, even if they promise *ex ante* not to do so. The threat of this type of *ex post* opportunism may adversely affect the entrepreneur's incentives. She may underinvest in effort because she correctly anticipates investor hold-up. Overall firm value may then sometimes be improved by limiting outside control.²

This paper investigates the financing decisions of motion picture producers in light of the tradeoff outlined above. The film producer, the entrepreneur who develops a motion picture project, faces a choice between financing through a studio-distributor (and relinquishing control) or obtaining independent funds (and retaining control). The primary friction in the motion picture financing relationship arises when a filmmaker is concerned about realizing an artistic vision as well as creating a profitable project. When choosing studio financing, the filmmaker faces the very real possibility that the studio will exercise its control to reduce her private (artistic) benefits. For example, studios not infrequently change the endings of films based upon test screenings.

I have assembled a unique database of 349 US films distributed in 1992 and 1993 that identifies the funding method used by the producer of each film. I find the likelihood

² Shleifer and Vishny (1997) document several other costs of large investors in addition to distorted management incentives. Among these are suboptimal diversification and the potential expropriation of minority shareholders by large blockholders. Another cost of concentrated equity, modeled in Bolton and Von Thadden (1998), is a potential decrease in stock liquidity. The focus of this paper is the effect of monitoring on managerial incentives.

of independent financing (entrepreneur control) increases when potential direct hold-up costs, as measured by the filmmaker's artistic stake, are high. I also find the likelihood of independent financing decreases when the importance of effort by the producer is lower. These findings are consistent with arguments found in the literature on investor monitoring and control in incomplete financial contracting.

This paper also investigates the role of several other factors, the most important of which is producer reputation, in motion picture financial contracting. I find that a producer's commercial reputation affects the amount of resources independent investors, without control, are willing to provide her. In contrast, studio investors, who maintain high levels of monitoring and control, appear relatively less concerned about producer reputation when allocating funds.

The results I report are consistent with existing anecdotal and systematic evidence that potential loss of control is an important consideration for businesses seeking outside funds. For example, the founders of Ben and Jerry's Homemade Inc. reportedly decided against venture capital backing to insure the company would continue to foster their social agenda (Shulins, 1987). Demsetz and Lehn (1985) suggest that control issues may also explain why mass media companies and professional sport clubs are predominantly closely held by management. The private benefits of managerial control in these industries may outweigh the possibility of greater profits under an alternative ownership structure.³

³ A recent example of the importance of control considerations in media firm ownership structure is given by Martha Stewart's purchase of her namesake company from Time Inc. As regards the purchase she is quoted as saying, "I didn't have to buy the company. I would have been a wealthy woman if I hadn't bought the company. I had a healthy portion of the profits, but no ownership. This is much better. I'm the mistress of my own destiny now" (Pogrebin, 1998).

The tradeoffs examined in this paper are similar in spirit to arguments made by Rajan (1992) (for the choice between public and private debt). In Rajan's (1992) model, it is bank lenders who have opportunities to exploit borrowers. He argues that banks' informational monopolies give them negotiating power over borrowers in setting interest rates when loans are renewed.⁴ In his analysis, the control banks can exercise is limited to setting loan terms. In the setting I examine, equity blockholder monitoring is more extensive and potentially onerous. Indeed, banks face the possibility of lender liability lawsuits if they overly interfere in a firm's operations. Bank loans may then be a favorable alternative to venture capital financing for entrepreneurs who highly value control.⁵

A Primer on Motion Picture Finance

The founder/CEO of a film project is the film's producer. The basic asset of the film project is a literary property (book, screenplay, etc.) which the producer either creates or to which she acquires rights. She is responsible for assembling the various inputs of the film (financing, cast, director, crew, etc.) around this property and for overseeing the business aspects of the production. The producer is also responsible for securing distribution for the film through a studio/distributor.

The involvement of the producer in the creative aspects of a production varies. In what I will call "artist-driven films," one individual serves as the writer, director, and producer. It is in these films that artistic vision and creative effort are most important. In

⁴ The findings of Houston and James (1996) are broadly consistent with Rajan's thesis. They find a negative relationship between reliance on bank debt and growth opportunities for firms with a single bank. For firms with multiple banks, they find the relationship to be positive

⁵ Control benefits, of course, are not the only factor in determining the choice between venture capital and bank loans. One factor deemed important in the choice between venture capital and bank loans is asset

other films, which I will refer to as “package-driven films,” the role of creativity is minimized. For these films, the producer simply attaches a director to a script written by a third party. In some cases, these films are put together by an agent who represents the scriptwriter, the director, and the star.

Film studios are the primary distributors of motion pictures. In this capacity they negotiate with theaters for playing time and market films to the public. In addition, they often play an important financing role in motion picture productions. Of the 326 (out of 349) films for which I was able to identify financing sources, 173 (or 53%) were studio funded. The rest, which I refer to as independently-financed, were funded by non-studio investors.

Independent finance takes a variety of forms. One method of independent finance is limited partnership financing augmented by pre-sales of ancillary rights. Pre-sales involve parceling out the rights to overseas distribution, home video, etc. and selling them individually. The revenues from the presales help reduce the amount of investor funding required. Sometimes domestic distribution rights are not sold until the film is well into production or even completed. Other forms of independent finance are discussed in the section of this paper which describes the data collection.

Industry sources (Cones, 1995; Baumgarten, Farber and Fleischer, 1992, among others) identify the major distinction between studio and independent finance from the filmmaker’s point of view as being in the degree of control which she is granted. When a studio finances a film, it generally insists on daily updates of the film’s progress and frequently puts a representative on location during filming. The studio also usually obtains

tangibility. Since the assets examined in this paper are all of the same type, the experimental design

the rights to “final cut.” That is, it reserves the right to make whatever changes it deems necessary at the time of the film’s completion. For example, a studio will occasionally change a movie ending found unsatisfactory by test audiences. The studio also generally retains all ancillary rights (overseas, video, etc.) to a film it finances. These rights amount to Grossman and Hart’s (1986) concept of asset ownership--the residual rights of control over the asset.⁶

Independent financing, on the other hand, involves a much smaller degree of investor control. The filmmaker is relatively free from independent investor interference in production and editing decisions. Only when a producer fails to complete a film either on time or on budget do independent investors exercise control. This control is exercised by an agent of the investors; the completion guarantor. The completion guarantor is paid an up-front insurance fee to take over production and complete films when necessary at its expense.

Filmmakers who finance their films independently rather than through a studio frequently cite control considerations as the primary motivation for their decision. For example, Jim Jarmusch, who is represented in my sample as the writer, director, and producer of the independent film, *Night on Earth*, is quoted as saying “The studios want to talk to you endlessly about the script. They want a say in casting and want to talk to you about how to cut the film... which for me is basically just a big waste of my time and

allows me to abstract away from the tangibility issue and focus on the private benefits issue.

⁶ These rights generally include the right to change the movie in unforeseen ways in the future. These changes can be the focus of debate years after the original production. For example, United Artists and filmmaker Barry Levinson had a public dispute over how the studio recut the film *Rain Man* for the airline market. At the airlines’ request, the studio removed a scene in which Dustin Hoffman’s character recited airline crash statistics and screamed to avoid boarding a plane. The studio was able to ignore

energy because I know what [I want] to do... I don't want people interfering with my ideas..." (Litwak, 1986, p.268). In exchange for control, producers choosing independent financing sacrifice the higher potential monetary rewards associated with studio productions. Filmmaker Mike Figgis puts it this way: "There is always the angel and the devil talking to you. The devil is saying 'Just do it and get out and then you'll be able to subsidize the next 10 [independent] movies.' But you send a signal out to younger filmmakers if you promptly sell out.." (Stein, 1995).

The focus of this paper is the filmmaker's choice between control regimes at the beginning of production. I assume that the filmmaker places a value on achieving her artistic vision as well as on any monetary rewards she receives. She faces a tradeoff between these objectives with his choice of financing method. I hypothesize that control rights are allocated in such a way as to minimize the costs implicit in incomplete financial contracting. The next section of this paper examines the testable empirical implications of this hypothesis in light of the theoretical literature.

Efficient control allocation becomes especially important when, as is the case in the film industry, the contractual environment limits the efficacy of incentive contracts. Although film financing/distribution contracts usually contain a profit sharing clause, for practical purposes a producer's compensation is generally limited to a fixed payment. Motion picture studios are notorious for accounting practices which insure that even most apparently successful films fail to generate "Net Profits," an industry specific term which does not correspond to economic profitability. Weinstein (1997) estimates that only 10 to 20 percent of movies ever reach positive Net Profits. Other estimates are as low as 5

Levinson's protests that the scene was crucial to the film's plot and characterization because of its

percent (Abelson, 1996). Goldberg (1997) relates that industry insiders place the figure closer to the low end of the range. Although the profit sharing arrangement is generally more favorable for an independently financed film, the producer's personal share is still predominantly fixed: the independent investors are paid out of the producer's share of the profits rather than the studio's. The Appendix discusses Hollywood accounting in more detail and explains why most films fail to reach positive Net Profits.

One explanation for the relatively fixed nature of the producer's compensation relates to risk aversion. The box office performance of a given film is highly unpredictable. For this reason, contingent compensation may be unappealing to a risk-averse producer and therefore costly to implement. A studio, with a portfolio of film projects, is in a much better position to bear the commercial risk. Inferior performance by one film may be offset by superior performance by another. Studio shareholders can of course further limit their risk through portfolio diversification.⁷ Alternative explanations for the weakness of profit sharing contracts, favored by industry critics, is that studios either coerce producers into unconscionable contracts or manipulate the accounting figures. For further analyses of the role of profit sharing contracts in the film industry, see Chisholm(1997), Goldberg(1997), and Weinstein (1997).

Before moving on, though, one might ask why the two forms of finance vary the way they do. Why can't non-studio financiers be given control and studio financiers be kept at arm's length, for example? I suggest two potential answers to this question. First,

contractual rights (Weinstein, 1989).

⁷ However, as Weinstein (1997) notes, career concerns may lead film studio executives to behave more cautiously than their shareholders might wish.

only studios have the expertise and incentives to actually exercise their control. Studios specialize in monitoring film projects and thus have a comparative advantage in doing so. Monitoring by independent investors, dispersed and without expertise, is ineffective by comparison. Secondly, studios have a great deal of bargaining power. Even if they promised not to exercise control, their strong position as distributors may allow them to do so anyway. This argument is similar to Welch's (1997) explanation of why bank debt is generally given priority in bankruptcy--banks have so much bargaining power that they will have *effective* priority regardless of their nominal priority.

The Costs and Benefits of Investor Monitoring and Control: Implications for Film Finance Choice

This section discusses the empirical implications for film finance choice of a tradeoff between optimal monitoring and optimal effort. The arguments are drawn primarily from the literature on the role of outside equity in incomplete financial contracting. I focus on this literature because (1) its arguments are most in the spirit of those of industry participants and (2) because analogies can easily be drawn between its assumptions and the problem of motion picture financing choice. I additionally discuss the implications of alternative theories of financial contracting which stress the role of reputation.

Investor vs. Entrepreneur Control

The literature on investor control usually takes as its starting point an entrepreneur seeking funds for a positive net present value project (in the context of the motion picture industry, the individual film project) from a wealthy investor. Aghion and Bolton (1992), and much of the literature which follows them, assume that a firm's value can in some way

be broken into two components: monetary output, which can be promised to investors, and private managerial benefits, which cannot.⁸ A common example of private benefits is the value a family places on employing relatives within a firm. For a filmmaker, these benefits are the satisfaction she receives in seeing her artistic vision realized. A common assumption is that there is some tension between private and monetary benefits so that maximizing one does not necessarily maximize the other. Motion picture industry sources frequently cite just that sort of tension between filmmakers and studios.

Following Grossman and Hart (1986) and Hart and Moore (1990), many of these models assume that contracting possibilities are incomplete. That is, a contract cannot pre-specify a required action for each (ex ante uncertain) possible state of the world. The contract must then specify which party has the right to choose which action to take. The delegation of control rights sets the status quo point of any renegotiations that occur at the time of the action.⁹

The exact nature of the ex post action varies somewhat between papers. In Burkart, Gromb, and Panunzi (1997), for example, the action takes the form of choosing from a number of mutually exclusive projects, some preferred by the investors and some

⁸ This assumption, of course, is not common to all papers in the (very large) literature on optimal financial contracting. One strand of the literature, for example, assumes managers have the ability to seize a firm's entire output unless given incentives not to do so. Townsend (1979) and Gale and Hellwig (1985) are early examples which find debt-like instruments optimal in that setting when output can only be verified at a cost. Another strand of the literature (e.g. Hart and Moore, 1989, 1994) examines the dynamics of repayment when projects continue beyond a single period and contracting possibilities are incomplete. Yet another strand, following Jenson and Meckling (1976), examines financial contracts in a moral hazard/agency framework. As discussed above, the arguments of the incomplete financial contracting literature are most in the spirit of those of industry participants. I refer the reader to Allen and Winton (1995) for a more in-depth overview of the literature on optimal financial contracting.

⁹ In some models, the degree of investor control is specifically assigned in the contract and in others, investor control is a function of the (ex ante chosen) level of equity concentration. The intuition of the results remains the same in either case.

preferred by the manager. In an alternate specification, Pagano and Röell (1998)¹⁰ assume investor monitoring directly reduces the private benefits the entrepreneur can extract. In still other settings, Hellman (1998) and Myers (1996)¹¹ assume investors can sometimes replace the original entrepreneur with a new manager. While differing in detail, these models share the assumption that investors have the opportunity to monitor and intervene in the actions of the firm. As some authors mention, this assumption is particularly appropriate when describing the venture capital relationship. What makes venture capitalist monitoring special in these models is that venture capitalists can add to overall firm value through their actions. Rather than just verifying output, they bring specific, valuable skills with them to the relationship.

In terms of motion picture production, the ex post action can be thought of as film editing. During the editing stage, the filmmaker assembles the raw film footage into the finished movie. One of the decisions made during editing is which scenes (and which takes of scenes) to keep and which to cut. It is impossible for a filmmaker to pre-specify which take of a scene will be included in the completed film since he cannot predict, let alone describe, what the differences between the takes will be. Additionally, certain scenes deemed essential when the screenplay was written might turn out to be extraneous or confusing at the editing stage.

¹⁰ Although not explicitly using a Grossman/Hart/Moore framework, the arguments of Pagano and Röell (1998) are very similar in spirit to the literature on incomplete financial contracting.

¹¹ Myers (1996) differs from the other papers discussed here in that it (1) does not explicitly model any nonpecuniary private benefits of control and (2) focuses on the repeated-game nature of financial contracting. It does, however, stress the ability of outside investors to ex post extract value from insiders.

Motion picture studios frequently employ focus groups to determine the most commercially viable cut of a film. The cut preferred by the studio, of course, is often not the one artistically favored by the filmmaker. A case in point comes from the production of the film *Mr. Jones*. The screenplay, written by filmmaker Mike Figgis, was a dark story about the relationship between a manic-depressive man, played by Richard Gere, and his therapist. In test screenings, audiences reportedly found the manic side of Richard Gere's character more entertaining than the depressive side. Tristar (the studio-financier) then asked Figgis to recut the movie to de-emphasize the depressive side of the character. When Figgis refused, Tristar exercised its control and had him replaced.

In the original Grossman and Hart (1986) framework, the eventual choice of the non-contractible action is generally ex post efficient because parties are free to renegotiate the contract at the time of the action. The control allocation just sets the status-quo point of the renegotiations. Where inefficiencies arise is in the choice of any ex ante (non-contractible) relationship specific investments the parties make. The important ex ante investment in the financial contracting literature is generally an effort decision by the entrepreneur. The entrepreneur may not invest enough personal effort into a project if the investor can extract most of the gains from that effort in the renegotiation stage. That is, if the investor has control, he can demand a bribe not to destroy private benefits. The entrepreneur then factors into her effort choice the expected bribe, which is generally increasing in her effort. On the other hand, if the entrepreneur has control, she will reap any gains to her effort, and will consequently work harder. Thus, suboptimal effort is one potential cost of investor control.

The literature on financial contracting extends Grossman and Hart (1986) by modeling situations in which, even if renegotiation is allowed, ex post inefficiencies still occur. Aghion and Bolton (1992) point out that if entrepreneurs are wealth-constrained, they may be unable to bribe investors not to intervene. Investors may then sometimes intervene even though such intervention will reduce overall firm value (decrease private benefits more than it will increase monetary benefits). Potential over-monitoring and/or over-intervention is thus another potential cost of investor control.¹²

Entrepreneur control has its costs as well of course. One such cost is potential under-monitoring. In Burkart, Gromb, and Panunzi (1997) and Pagano and Röell (1998), for example, entrepreneur control is facilitated by dispersed outside equity. As in Shleifer and Vishny (1986), dispersed outside equity holders in these models have reduced incentives to monitor. Another explanation for reduced monitoring under entrepreneur control is the threat of hold-up by the entrepreneur. If monitoring comes with a cost, the threat of ex post expropriation will reduce investors' incentives to undertake the monitoring investment.

A secondary cost of entrepreneur control is a reduction in the amount of funds she can raise. Given the reduced monitoring found under investor control, the potential payouts of the firm are reduced. Investors will then consequently pay less for the rights to these payouts. The entrepreneur then faces a choice between higher private benefits under entrepreneur control and higher monetary wealth under investor control.

¹² Crémer (1995) makes a similar argument in an asymmetric information framework.

The above discussion of the costs and benefits of investor control seems to conform to filmmaker discussions of the costs and benefits of studio financing. See for example the Mike Figgis and Jim Jarmusch quotes of the previous section. More importantly, the discussion seems to conform to filmmaker's *actions* in choosing financing. After his experience with Tristar on *Mr. Jones*, Figgis deliberately avoided studio financing for his next film, *Leaving Las Vegas*. About the decision he says, "One of the points in making it was to make it independently- and not to be tied down" (Horn, 1995). The cost to him was in accepting a small \$3.5 million budget and in giving up hopes of major financial rewards. He says when he produced the film, he "thought it would be a European art-house movie" and "really didn't expect any reception for it in the States" (Stein, 1995).

I draw two main testable empirical implications of the above argument to the motion picture financing decision. First, I hypothesize that filmmakers with a large stake in the *artistic* success of the film will be more likely to choose independent financing. I draw this implication because the potential for value-destroying excess monitoring is presumably highest for these individuals. Second, I hypothesize that films which require higher producer effort will be more likely to be independently financed. This prediction comes from the argument above that high levels of investor control may lead to suboptimal entrepreneur effort. The data description section of this paper describes the proxies for the filmmaker's artistic stake and required effort.

The Role of Reputation

An alternative explanation of finance choice concerns producer reputation. Using an asymmetric information framework, Diamond (1991) models how reputation affects the

choice between bank and public debt. Banks in Diamond's model have the ability to monitor entrepreneurs at a cost. In the model, firms have the ability to use bank borrowing to build a reputation. They can then use this reputation to eventually enter the public debt market at lower cost. Studio financing, which involves extensive monitoring, corresponds to bank finance in terms of Diamond's model. Independent finance, where less monitoring takes place, corresponds to public debt. Since more experienced firms in Diamond's model use public debt, the model would predict that producers with better *commercial* reputations will use independent finance.¹³

Note that the preceding argument ignores the role that producer reputation may play in mitigating studio hold up problems. Studios may well want to deal with a successful producer on multiple occasions. Producers may avoid dealing with studios who have been unfair to them in the past. For this reason, studios may be less aggressive in expropriating rents from highly reputable producers than from unknown quantities. Whether this effect or the Diamond (1991) effect dominates is an empirical issue.

I also investigate another potential effect of producer reputation. As discussed previously, independent investors, without control, may rightly limit the amount of capital they put at risk in a production. A good commercial reputation may serve as a bonding mechanism for a producer and allow her to raise more capital. Note that this story would predict little, or no, reputation effect for studio productions. Since studios can monitor and control a production, reputation is less of a concern.

¹³ Note that in Diamond's model, even bank debt may not be an option for some very low rated borrowers. A parallel may be drawn from this group to producers of self-financed/independently distributed films. In section III, I describe the distinction I make between independent finance and independent distribution.

Another model which deals with reputation in a contracting framework is Gibbons and Murphy (1992). In that model, career concerns serve as a method of managerial control for younger workers. Managers work harder in the early stages of their careers because their future wages depend on the market's assessment of their abilities. Older workers require more powerful incentive contracts than their younger ones because their remaining careers are shorter. To the extent that monitoring is a substitute for incentive contracts, the model would imply that older workers should be monitored more closely. Since studio financing is associated with greater monitoring, the career concerns model would predict a positive correlation between producer age and the probability of studio financing.

Data

Independent Financing vs. Independent Distribution

Before describing data sources, a distinction must be made between independently *financed* films and independently *distributed* films. When the media talks of independent pictures, it generally refers to small, art-house features distributed outside the major studio system. These films, often self-financed and hence, by necessity, low-budget, are arguably different in kind from those distributed within the studio system. While some independently financed films fit in this category, many do not.

Figure 1 breaks down the motion pictures in my sample into a 2 by 2 matrix based on how they were financed and how they were distributed. Note that no films lie in the lower left quadrant (studio financed/independently distributed) since studios distribute the films they finance. In this paper my primary focus is on the factors influencing the financing of the films in the upper two quadrants (the studio distributed films). I separate

out independently distributed films to isolate the financing decision from the distribution decision. I wish to rule out the possibility that the independently distributed films are driving my results.

The definition of a studio for the purposes of this paper is a film distributor also involved in film finance. Any distributor who financed at least one film in my sample is termed a studio. The 17 (of 51) distributors in the studio group include the traditional "major studios," such as Disney and Warner Brothers, as well as the so-called "mini-majors," such as New Line Cinema. This group includes all distributors who distributed more than 7 films in my sample. The average number of films distributed per studio in my sample is 17.4. The average number of films distributed by the 34 non-studios is 1.6.

The data characteristics reported in Table 2 (data sources described shortly) support the decision to separate out independently distributed films. These films really do appear different in kind from the other two groups. The producer of the average independently financed/independently distributed film was associated with only 4.2 films in his career. The producer of the average independently financed/studio distributed film, on the other hand, was associated with 9.9 films (statistically indistinguishable from the 11.1 films by producers of average studio financed/studio distributed films). The average domestic box office receipts for the independently financed/independently distributed films was only \$1.84 million vs. \$19.92 million for the independently financed/studio distributed group and \$37.22 million for the studio financed/studio distributed group.

The lower box office figures for independently financed films is consistent with the theories of control rights discussed previously. Studios, as specialized monitors, can increase the monetary value of the project through their actions. Producers of studio

financed films also have access to a greater amount of capital than do independent filmmakers. Industry sources frequently cite this as a major benefit of studio financing. For example, Cones (1995) says, "A studio can generally provide more significant resources ... (it) can offer the promise of a higher production budget." Box-office performance is thus endogenous to financing method. The bigger stars that a bigger budget can attract will attract a larger audience to the film. Box office performance is also partially dependent on studio marketing effort. Studios have less incentive to market films they do not finance, especially if they do not hold all ancillary rights, an issue addressed later.

Basic Film Data

My primary data source for basic film information is the 1994 edition of the *Film Index International* CD-ROM. I henceforth refer to this source as FII. The database contains information on approximately 90,000 films dating from prior to 1930 as well as information on about 30,000 individuals involved in the film industry. FII identifies 728 US-produced films as having been released in 1992 and 1993, my sample period. The information I draw from FII includes film name, production company, year released, year produced, and production credits for cast members, producers, directors, and screenwriters. From FII, I also extract each producer's film history.

I restrict my attention in this paper to feature films released in theatres. Since the FII database contains TV and direct-to-video films as well as feature films, I employ two screens to create my sample. First, I limit the data set to films for which I am able to find a domestic theatrical distributor listed in the 1996 edition of the *International Motion Picture Almanac*. I additionally limit the data set to films with domestic box office figures

reported in the *Compact Variety* CD-ROM database. This screen, which reduces my sample to 349 films¹⁴, provides the distributor names and box office figures for all films in the final data set. Domestic box office receipts, which include ticket sales in both US and Canada, is encoded as a dollar amount in a variable called BOX.

Financing Method

This paper examines the empirical determinants of observed film financing choices. Since I am aware of no pre-existing database which identifies the source of films' funding, the financing data used herein come from a unique database I develop for this paper. The variable FINANCE separates films into three categories: studio financed/studio distributed, independently financed/studio distributed, and studio financed/studio distributed. It is this variable which is used in the multinomial logit regressions I report later.

The primary source for data on film finance is weekly *Variety* magazine. Every article in the magazine from January 1991 to December 1993 is read for relevant information. This information takes the form of general articles on motion picture finance, discussions of individual films, and profiles of companies and individuals involved in film production and finance. Weekly production reports, market and festival updates, and gossip columns in the magazine are also employed. Annual reports of film production and distribution companies, as well as *Dow Jones News Retrieval* searches, provide additional information on financing methods. I am able to classify the financing method of 326 of the 349 films in my sample. Of these, 173 are studio financed/studio distributed,

¹⁴ If any theatrically-screened films are inadvertently eliminated, it is very likely that they fall into the independently financed/independently distributed category, to which I devote less attention. The data for

99 are independently financed/studio distributed, and 54 are independently financed/independently distributed.

Table 1 describes the most common methods of motion picture finance and classifies them as either studio or independently financed. Cases such as studio development deals or limited partnerships are easily classified. The main classification criterion I use for cases where some studio funds are used and some outside funds are used is the degree to which the studio retains rights. Films in which the studio retains all ancillary rights are classified as studio-financed. Films where the producer retains some rights are classified as independently financed. This definition fits in with the definition of ownership (residual rights to use an asset) used in the incomplete contracting literature and also correlates strongly with the degree of control exerted during filmmaking. It is also consistent with Shleifer and Vishny's (1986) notion that the greater the degree of investor concentration, the greater the degree of investor activism. Readings of industry sources confirm that film producers feel freer from outside interference when studio rights are limited.

The primary case where I classify a film as studio financed, even though some outside funds are used, is in a so-called "negative pickup deal." In a negative pickup deal, the studio guarantees to pay for a film when it is completed. The producer then takes out a bank loan, backed by this guarantee, to finance the production. In general the studio retains all ancillary rights and owns the negative. Ownership of the negative gives the studio the right to reissue the film using any potential future distribution technology (e.g. Internet broadcasts, etc.) without needing to gain permission from the filmmaker. An

studio distributed films, both studio and independently distributed, seems quite reliable.

alleged reason that studios use negative pickup deals is to subvert union contracts.

Independent production companies do not face the same union restrictions that studios face as signatories to collective bargaining agreements. Negative pickup deals reputedly allow the studios to skirt these agreements by using a production company which is independent in name only to make a film (Fleming and Natale, 1992; Cones', 1992, definition of "Artificial Pickup").

The primary reason I limit my financing method variable to three categories is simple data availability. For many films I have only enough information to classify them into studio or independently financed categories, not into the 9 categories of Table 1. For example, I am able to determine that some films had not secured a studio distributor at the time the production was started. Since studios distribute the films they finance, the lack of studio distributor implies that the film was not studio financed. Although reducing the method of financing into two categories abstracts away from some industry detail, the abstraction is sensible in terms of the questions examined herein. This investigation is primarily concerned with the question of control allocation in financial contracting. The primary determinant of control for a motion picture is whether or not it is studio financed.

Note that self-financing is classified as independent finance. Self-financed films are by necessity an order of magnitude smaller than films in which outside financing is used. Almost all of these films are independently financed/independently distributed. These films are not assigned to the studio distributed categories where I focus most of my analysis.

Private Benefits

I hypothesized earlier that a filmmaker with a large artistic stake in her production will be more likely to choose independent financing. My primary proxy for the

filmmaker's artistic stake is whether a film is artist-driven or package-driven. Recall that artist-driven films are ones in which one individual serves as writer, director, and producer. These are the films for which achieving an artistic vision is the most important to the filmmaker. I thus create an artist-driven film dummy variable which takes on the value of 1 if the individual credited as the film's director is also credited as a screenwriter and a producer ("Producer," "Executive Producer," or "Coproducer"). The artist-driven dummy variable also takes on a value of 1 if a director and a producer jointly collaborated on a screenplay. In all other cases, the variable takes on the value of 0.

Consistent with my hypothesis, 24% of independently financed/studio distributed films are classified as artist-driven while only 12% of studio financed/studio distributed films are. A two-tailed binomial test comparing the frequency of artist-driven films in the two groups rejects the hypothesis that they are equal at the 1% confidence level. The degree of private benefits is, of course, only one factor influencing finance choice. The next major section of this paper explores the effects of private benefits on financing choice in a multivariate setting.

Importance of Producer Effort

Another implication of the models discussed previously is that the likelihood of studio financing should be inversely related to the importance of producer effort. The artist-driven dummy variable serves as a proxy for the importance of creative effort as well as the degree of private benefits inherent in the project. The sensitivity of a film's value to the actions of one individual makes hold-up problems potentially most severe for artist-driven projects.

A second proxy for the importance of producer effort is the film's genre. Certain film genres, like dramas, require a greater degree of creative effort by the filmmaker than others. The model would predict that genres requiring greater filmmaker effort will be more likely to be independently financed. The category of films most criticized in the trade press for lack of artistry are "high-concept" comedies. "High Concept" is defined by Cones (1992) as "A film idea, concept or plot that can be described in a very few words." Examples of high concept ideas might be "High school students uncover frozen caveman" or "Three bachelors take care of a baby." The degree to which a filmmaker can add value to such a project through artistry is limited. Conversely, even poor effort by the filmmaker will not hurt the film's box office performance very much. I therefore expect that comedies will have a higher probability of being studio financed than dramas.

My source for film genres is *Microsoft Cinemania '97*. When *Cinemania* gives more than one genre for a given film, I use the first one listed. I condense the 25 genre categories recorded in *Cinemania* to 4: action, comedy, drama, and other. Each of these genres is encoded as a 0/1 dummy variable. The action, comedy, and drama categories together account for 80% of the films in my sample. None of the individual genres which are lumped into the "other" category account for more than 5% of the sample.

Table 2 breaks down the percentage of films in each genre by financing category. Comedies and dramas account for 28 and 29 percent of studio-financed films, respectively. For independently financed/studio distributed films, comedies account for only 18 percent of the sample while dramas account for 44 percent. T-tests comparing the percentage of comedies and the percentage of dramas across categories are both significant (at the 5%

and 10% confidence level, respectively). While these results are consistent with the model's predictions, I postpone conclusions until the multivariate analysis.

Reputation and Career Concern Variables

Reputation is another variable discussed as potentially affecting financial contracting. My proxy for producer reputation is the domestic box office performance of the film's producer's most recent previous film. I call this variable COMREP. Previous film data comes from FII and *Microsoft Cinemania 97*. Box office performance data is drawn from the *Compact Variety* CD-ROM.

Also considered are the implications of career-based models. Producer ages are not systematically reported. I thus use the number of previous films by the producer as a proxy for age. The number of previous films, drawn from FII and *Microsoft Cinemania 97*, is recorded in a variable called NUMFILM. Gibbons and Murphy (1992) hypothesize that reputation effects may affect contracts in a nonlinear manner. I thus also create a variable called NUMSQ, which is equal to NUMFILM squared. Alternate specifications of producer career stage are discussed in the next section. Note that NUMFILM may be a proxy for reputation as well as age. Any results involving NUMFILM should then be interpreted with caution.

Multivariate Analysis of Film Financing Decisions

Methodology

Table 3 documents the results of a multinomial logit regression examining finance choice. The three categories are studio financed/studio distributed, independently financed/studio distributed, and independently financed/independently distributed. The

base case for reporting purposes is the studio financed/studio distributed category. The multinomial logit technique investigates how the exogenous variables influence the relative probability of a given film belonging to a given category. One benefit of the specification used is that it does not require any ordering between the categories.

Panel A investigates the predictors of finance choice among studio distributed films. The predicted relative probability of a studio distributed film being independently financed is given by:

$$\frac{\text{Prob(Independently Financed/ Studio Distributed)}}{\text{Prob(Studio Financed/ Studio Distributed)}} = e^{XB_{(\text{Independently Financed/ Studio Distributed})}}$$

Reported are estimated coefficients and t-statistics (in parentheses.) A positive coefficient indicates that the variable in question is positively related to the relative likelihood of independent financing.

For completeness, in Panel B I report the coefficients for independently financed/independently distributed films compared to studio financed/studio distributed films. Recall that within the independently financed/independently distributed group are small art-house productions which may differ in kind from studio distributed films. The results of Panel B are harder to interpret than those of Panel A because they reflect the determinants of the distribution decision as well as those of the financing decision. Nevertheless, the general character of the results supports the inferences I draw from Panel A as regards the private benefits and effort variables.

Each panel reports results for three specifications. Specification 1 includes only the artist-driven film dummy and the reputation control variable (COMREP). Specification 2 adds the proxies for producer age (NUMFILM and NUMSQ).

Specification 3 adds the genre dummies. Drama is the omitted category for the genre dummy variables. A negative coefficient thus means that the specified genre is less likely to be independently financed (relative to the studio financed/studio distributed group) than a drama.

Private Benefits

The estimated coefficient on the artist-driven film dummy variable is positive and significant in all three specifications reported in Panel A. This is consistent with the prediction that entrepreneur control will be more likely when nonpecuniary private benefits of control are high. Note that the point estimate of the coefficient, ranging from 0.791 to 0.882, remains relatively constant across all specifications.

The coefficients are economically as well as statistically significant. Consider the predicted probability ratio, $\text{Prob}(\text{independently financed/studio distributed}) / \text{Prob}(\text{studio financed/studio distributed})$ for a producer of average reputation. The coefficients estimated in Specification 1 imply that the ratio increases from 0.50 for package-driven films to 1.21 for artist-driven films. For Specification 2 the ratio increases from 0.51 to 1.22. Finally, for specification 3, the ratio (for a drama) increases from 0.76 to 1.67.

Importance of Producer Effort

The results reported above for the artist-driven film dummy are also consistent with the prediction that entrepreneur control will be highest when effort is most important. The results for the genre dummy variables further support this hypothesis. Consider the results presented in Panel A. Consistent with the model's predictions, the coefficient on the comedy dummy is negative and significant. Recall that comedies are frequently "high concept" and are not considered to require as much artistry (filmmaker effort) as dramas

require. The economic significance of the comedy dummy is also large. The predicted relative probability ratio for a non artist-driven drama is 0.76. For a comedy, this ratio falls to 0.32.

Still considering Panel A, the negative and significant coefficient on the “other” category is also consistent with dramas requiring greater filmmaker effort than generic genre films. The coefficient for action films is negative but not significant. The joint hypothesis that genre does not effect financing choice for studio distributed films (i.e., that all three genre coefficients are 0) can be rejected at the 5% level. Note that the results are consistent with action films requiring a level of filmmaker effort greater than that of films in the comedy or other categories. This result is not surprising since the logistical complexity of shooting action films is greater than that of shooting comedies.¹⁵

Reputation, Career Concerns, and the Financing Decision

The reputation and career concern variables seem to have little power in predicting finance choice among studio distributed films: in none of the three specifications in Panel A are the coefficients on COMREP, NUMFILM, or NUMSQ significant. In Panel B, which compares independently distributed films to studio financed/studio distributed films, all of the corresponding coefficients are significant at at least the 10% level. The hypothesis that the NUMFILM coefficient of the studio financed/independently distributed category equals that of the independently financed/independently distributed category can be rejected at the 1% confidence level. The corresponding test for COMREP is significant

¹⁵ Note that even if the effort distinction between action films and comedies is *a priori* unclear, this test can be interpreted as a joint test of the hypothesis that there are differences in effort across genres and that these differences are reflected in the financing choice.

at the 10% level. From the results of the multinomial regression, it seems that reputation plays a role only in the distribution decision rather than the financing decision. I later present evidence that, although the direct effect of reputation on the financing choice may be limited, reputation does play an important role once independent financing is chosen.

Note that one possible explanation for the lack of significance of the reputation variables in Panel A may be that reputation plays two conflicting roles which approximately cancel one another. A good commercial reputation might, as in Diamond (1991), reduce the need for monitoring. On the other hand, a studio may avoid holding up a producer it would like to work with again in the future. The hard feelings generated may cause the producer to choose another studio to distribute her next film. Contrary to the Diamond (1991) story, this story would predict a negative relationship between reputation and the likelihood of independent financing.

In Panel B the coefficients on COMREP and NUMFILM are negative and highly significant. Young and inexperienced filmmakers apparently serve apprenticeships in the independently distributed category before moving on into one of the other two categories. The negative sign of the NUMSQ coefficient would seem to suggest that this relationship reverses itself at some point (when NUMFILM=36 as indicated by the estimated quadratic relationship). The NUMSQ result, however, appears to be driven by the famous B-movie producer Roger Corman, with 73 films to his credit (by far the most of any producer in the sample). When the film *Carnosaur*, for which he received an Executive Producer credit, is removed, the NUMSQ coefficient becomes insignificant (the other results remain qualitatively unchanged).

Sensitivity Analysis

The results reported in Table 3 seem relatively insensitive to which Specification (1, 2, or 3) is considered. All factors which are significant in one specification (besides the constant term) are significant whenever they appear in other specifications. I run several other specifications (not reported in the Tables) for further sensitivity analysis.

First I run simple binomial logit and probit models comparing finance choice among studio distributed films. In these models, independently distributed films are dropped from the sample entirely. For both the logit and the probit models, the results are qualitatively the same as those reported in Table 3, Panel A.

Gibbons and Murphy use a late-career dummy variable in their empirical analysis of executive career concerns rather than just a simple age measure. They find that the pay-for-performance sensitivity of CEOs is greatest for those within the last three years of their careers. My NUMFILM variable may be unable to capture such a cutoff effect. I therefore create dummy variables for $\text{NUMFILM} \geq 10$ (67th percentile), $\text{NUMFILM} \geq 20$ (87th percentile), and $\text{NUMFILM} \geq 30$ (95th percentile). Each of these dummies in turn is substituted for NUMSQ in the multinomial logit regressions. None of the coefficients on these dummies were significant in the specifications corresponding to Panel A.

Finally I investigate the effects of actor/producers. One could argue that actor/producers have high artistic stakes in the film and thus should have the same effect on financing as writer/director/producers. An alternate hypothesis is that actors are given production credits just as deal-sweeteners and are really producers in name only. In order to distinguish between these hypotheses, I add a cast/producer dummy to specification 3. I find this coefficient insignificant for independently financed/studio distributed films but

positive and significant (at the 5%) level for independently financed/independently distributed films. I am therefore reluctant to make a conclusion as to the role of actor/producers.

Alternative Explanations

The evidence in Table 3 is consistent with the theories of incomplete financial contracting presented previously. Specifically, the probability of independent financing is positively related to proxies for the potential severity of hold-up problems. It may be the case, however, that other, non-mutually-exclusive, factors may play a role in motion picture financial decisions.

For example, one might argue that independent investors are simply unsophisticated outsiders to whom the worst producers go for funds. The results of Table 3 suggest that, if sophistication is an issue, it is likely important only for independently financed/independently distributed films. The insignificance of the COMREP and NUMFILM coefficient in Panel A indicates that producers of independently financed/studio distributed films are of roughly the same quality as those of studio financed/studio distributed films. Producers of independently distributed films, on the other hand, are less experienced and successful than those in either of the other groups. It may be the case that the low-budget nature of these films makes unsophisticated investor financing more feasible. Indeed it is only for these films that I find evidence of financiers like “Mattress Mac, the discount furniture king,” who invested in the Chuck Norris film *Sidekicks* (Fleming, 1992). Yet still, the “Mattress Mac Factor” seems incapable of by itself explaining the significant coefficients on the other explanatory variables for this group.

The framework of the theoretical discussion described earlier assumes that producers develop projects and choose financing methods themselves. A small subset of films are, however, developed within a studio by in-house producers. For these films, it may be more appropriate to model the financier as being the decision maker. The hold-up costs of studio control can in some sense be thought of as transaction costs in the producer/financier/distributor relationship. As long as alternative financing sources are available, one would expect studios to specialize in the types of films for which these costs are not severe. Independent financiers, able to delegate control, would specialize in productions which require higher levels of creative effort. So in this respect, rather than an alternative explanation, this argument is more of a reinterpretation of the arguments previously discussed.

Finally I consider the role of project size. One could hypothesize that producers match financing method with project size, bringing larger projects to studios and smaller ones to independent financiers. For the film industry, however, the causality runs largely in the opposite direction. Experienced filmmakers assert that any script can be shot in either a low cost version or a high cost version, depending on the funds available. As mentioned previously, filming locations, costumes, and so forth can be modified to fit the available budget. Filmmakers tend to view a reduced budget as a cost of the increased control inherent in independent productions. Note that not all independently financed productions are low budget. In fact, weekly *Variety* reported that independently financed *Cliffhanger* was a candidate for "1992's most expensive production" (Fleming, 1993). The following section examines why independent investors may be willing to advance such significant funds to a production despite lacking control.

Reputation Revisited

The regressions presented in the last section found little evidence that reputation affects the probability of how a studio distributed film will be financed. This section examines an alternative role that reputation may play in motion picture financial contracting. It presents evidence that a good commercial reputation allows independent producers access to greater resources. That is, independent investors seem to provide more capital to a producer with a reputation to protect.

One of the most important factors determining a film's budget is how much is paid to the cast. The cost of hiring just one star actor can add upwards of \$20 million to the film's budget.¹⁶ For this reason, I use the box-office appeal of the film's lead actor or actress as a proxy for the film's cost.¹⁷ The amount paid to a star is very much a function of how his or her past films have performed. Particular attention is paid to the performance of the star's most recent film since his or her audience appeal can fade rapidly. My definition of box-office appeal is thus the domestic box office performance of the film's lead star's most recent previous film. This variable is called CASTBOX.

Table 4 presents the results of 3 linear regressions with CASTBOX as the dependent variable. Specification 1 includes as independent variables the financing method of the film, the distribution method of the film, and the producer's commercial reputation. The independent finance (distribution) variable is a dummy variable equal to 1

¹⁶ The Motion Picture Association of America reports that the average negative (production) cost of a studio feature was \$20,050,500 in 1987, \$28,858,300 in 1992, and \$53,415,700 in 1997. Trade publication articles attribute much of the budget inflation to increased star salaries.

¹⁷ Budget figures are not reported on a systematic basis. Those few that are reported are generally found in articles about over-budget productions.

if the film is independently financed (distributed) and 0 otherwise. Producer commercial reputation is measured by the COMREP variable (the box office performance of the producer's most recent previous film). Specification 2 adds an interaction variable equal to the independent finance dummy variable times COMREP. Specification 3 adds the genre dummy variables.

In specification 1, the coefficient on reputation is positive and significant as expected. Thus a good reputation appears to allow a producer to raise the funds necessary to hire a name performer. The most compelling results of this table, however, concern the interaction terms in Specifications 2 and 3. In both these specifications the interaction coefficient is positive and significant while the reputation coefficient is insignificant. Thus reputation only seems to play a role in independently financed productions. Studios, capable of monitoring and controlling producers, appear less concerned about producer reputation than independent financiers, who lack control.

Marketing Intensity and Finance Source

As mentioned previously, studio distribution rights to an independently financed film are often limited to the domestic theatrical market. An independent filmmaker will often split off overseas and/or video rights (ancillary rights) from domestic distribution rights when raising capital. A big advertising campaign will influence the performance of a film in ancillary markets as well as in the domestic theatrical market, however. The attention generated by a strong box office performance will generally lead to stronger video rentals, for example. Whenever a studio does not share in all the gains from promotion, as in these cases, its marketing effort might be suboptimal. Since it pays all the advertising costs without reaping all the rewards, its incentives to advertise are reduced.

Another factor which reduces a studio's incentives to promote an independently financed film is its share in the film's profits. The studio's share of profits is naturally reduced in a film it does not totally finance—it must share the profits with other investors. Again the studio does not gain all the marginal benefits to advertising. For this reason and the one above, greater marketing effort may be a benefit of studio financing compared to independent financing.

Table 5 presents a least-squares linear regression of studio marketing effort versus finance source for studio distributed films. The proxy for studio marketing effort is a variable called NUMSCR. NUMSCR is the number of screens on which the film opened, as reported by weekly *Variety*. The independent finance dummy takes on a value of 1 for independently financed films and 0 otherwise. Control variables in Specification 1 include CASTBOX (the performance of the film's star's previous film) and COMREP (the performance of the producer's most recent previous film). Specification 2 the genre dummy variables.

The coefficients on the finance dummy are significant in both specifications. The estimated coefficient on the finance dummy in Specification B indicates that studios open films they finance on 367 more screens than they do for films they do not finance, controlling for star drawing power, filmmaker reputation, and genre. The significance of the finance coefficient suggests that studios market films they finance more heavily than those they do not. These results do not necessarily mean studio marketing effort is suboptimal, however. Recall that the commercial appeal of a movie is endogenous to finance (through monitoring) in the model of section 2. Since independently financed films have lower commercial potential than those which are studio financed, lower advertising

expenditures may be optimal. Additionally, different types of films require different marketing approaches. Films of high artistic quality are sometimes rolled out more slowly than others in order to build good reviews and word of mouth. While the results of Table 5 show a correlation between financing and marketing effort, the causes of the correlation cannot be determined.

It is important to note that more intensive ex post marketing is unlikely by itself to explain observed patterns of motion picture finance. If better marketing were the only benefit to studio finance, an optimal arrangement would seem to be (a) independent finance for the production followed by (b) the sale of the completed film to the studio. The filmmaker would then be free to make the film he wanted and the studio would receive all the marginal benefits of marketing. Given that this arrangement is not the only one observed in practice, it seems likely that there are additional benefits to studio involvement. This paper argues that studio involvement in the earlier stages of production adds some value to the project. A studio-financier is a specialized monitor who, like a venture capitalist, can increase the commercial viability of a project. Non-studio investors lack the expertise to monitor effectively.

Since non-studio finance is observed in practice, it seems likely that studio control comes with costs as well as benefits. This paper argues that the primary cost of studio control is the potential for interference which results in diminished control benefits to the entrepreneur. Filmmakers are concerned with their artistic reputation and derive greater personal satisfaction when they control all production and editing decisions. These private benefits are reduced by studio interference. The prospect of over-interference reduces the filmmaker's level of personal effort in the early stages of the project.

Additional evidence that desired levels of marketing intensity do not by themselves explain financing decisions can be drawn by comparing the results of Tables 3 and 5. The results reported previously suggest that comedies are more likely to be studio financed than are action films. Yet the results of Table 5 indicate that the marketing effort for comedies is not greater than that of actions films and is, if anything, less (although the coefficients are not statistically different at conventional significance levels).

Conclusion

The results of this paper support the proposition that outside investor control comes with costs as well as benefits. Monitoring may simultaneously increase the monetary value of a project while reducing private benefits. The threat of investor hold up may reduce an entrepreneur's incentives to invest effort into a firm. This argument implies that the likelihood of investor control will be inversely related to (a) the expected direct costs of interference in terms of lost private benefits and (b) the importance of entrepreneurial effort. The empirical analysis of motion picture financing is consistent with both of these propositions. I find that independent financing is more probable when a filmmaker's artistic stake in a film is high and when the film's genre requires a higher personal commitment to its success.

I additionally find evidence on the role of reputation in motion picture financial contracting. The evidence suggests that a good commercial reputation allows producers to raise more funds from independent investors. For studio financed films, I find no such relationship. Thus monitoring seems to serve as a substitute for reputation in studio-backed productions.

Figure 1: Finance Method vs. Distribution Method

		Finance Method	
		Studio	Independent
Distribution Method	Studio	Studio financed/studio distributed films 173 in sample	Independently financed/studio distributed films 99 in sample
	Independent		Independently financed/distributed films 54 in sample

Note: No films lie in the lower left quadrant because studios distribute all films they finance. The lower right quadrant represents independently financed/independently distributed films. These are often self-financed, art-house features. This paper focuses on the factors that distinguish films in the upper 2 quadrants, i.e. the financing choice of studio distributed films.

Table 1: Classification of financing methods.

Classification	Type of financing	Description
Studio	Studio development deal	Distributor participation in earliest stage before all elements in place. Producer possibly employee of studio.
Studio	Studio-based independent production company	Independent production company has headquarters at studio. Studio totally finances the company's productions.
Studio	Studio financing/distribution deal	Producer comes to studio with fully developed package. Studio finances production.
Studio	Negative pickup deal	Studio agrees to pay for movie once it is finished in production. Producer uses this guarantee as collateral for bank loan. Studio retains ancillary rights.
Independent	Co-financing	Studio pays for part of cost. Producer finds other financing for rest. Studio does not retain all rights to the film. Producer usually owns the negative.
Independent	Overseas Pre-sales	Producer sells overseas and/or video rights to film. Uses advances to finance film without obtaining domestic distributor.
Independent	Long-term independent finance	A producer arranges financing for a whole slate of films through an independent production company he owns.
Independent	Single- film independent investor finance	Producer arranges independent investor financing, such as a limited partnership, for just one film.
Independent	Self-financing	Producer finances through personal savings, credit cards and/or family. Primarily limited to small independently distributed films.

Table 2: Univariate Comparisons of Motion Pictures by Finance and Distribution Methods

	All films	Studio financed Studio distributed	Independently financed Studio distributed	Independently financed Independently distributed	Financing Unknown
Total Number	349	173	99	54	23
Average Domestic Box Office (\$mil)	25.37	37.22	19.92**	1.84**	14.89**
Average opening number of screens	1081	1348	918**	244**	1047*
Percent Artist-driven	20%	12%	24%†††	37%†††	22%
Box Office Receipts of producer's last film	21.38	28.45	21.72	2.27**	11.64*
Average number of films by producer	9.6	11.1	9.9	4.2**	8.7
Box Office Receipts of star's previous film (\$mil)	20.08	25.59	19.47	5.32**	15.98
<u>Genre Breakdown (%)</u>					
Action	21.8%	22.0%	25.3%	18.5%	13.0%
Comedy	23.2%	27.8%	18.2%*	14.8%*	30.4%
Drama	35.2%	28.9%	44.4%**	40.7%	30.4%
Other	19.8%	21.4%	12.1%*	25.9%	26.1%

Note: This table compares the characteristics of films across finance and distribution categories. A studio is defined as a domestic motion picture distributor involved in film finance. The films in the dataset are US produced films distributed in 1992 and 1993, as identified in the 1994 edition of *Film Index International*, the 1996 edition of the *International Motion Picture Almanac*, and the *Compact Variety* CD-ROM. These sources provide basic data on motion picture credits, distribution, and box-office performance. The chief sources for financing data are articles in weekly *Variety* magazine from January 1991 to December 1993. *Variety* also provides the opening number of screens. Previous cast credits and genres come from *Microsoft Cinemania '97*. Artist-driven films are defined as those films for which 1 individual serves as the writer, director, and producer or in which a producer and director collaborate on a script.

* Statistically different from the Studio financed/Studio distributed group at the 10% confidence level using a two-tailed t-test. "All films" group not tested.

** Statistically different from the Studio Finance/Studio Distributed group at the 5% confidence level using a two-tailed t-test. "All films" group not tested.

††† Statistically different from the Studio Finance/Studio Distributed group at the 1% confidence level using a two-tailed binomial test. "All films" group not tested.

Table 3: Multinomial Logit Results (Base Case is Studio Financed/Studio Distributed)

Panel A: Independently Financed/Studio Distributed vs. Studio Financed/Studio Distributed

Obs	Constant	Artist-driven dummy	COMREP	NUMFILM	NUMSQ	Genre Dummies (Drama is the omitted category)		
						Action	Comedy	Other
1 326	-0.630 (-3.96)***	0.882 (2.64)***	-0.003 (-1.07)					
2 326	-0.623 (-3.00)***	0.875 (2.61)***	-0.003 (-0.96)	0.003 (0.11)	-0.0002 (-0.27)			
3 326	-0.111 (-0.39)	0.791 (2.31)**	-0.003 (-1.04)	-0.004 (-0.13)	-0.0007 (-0.20)	-0.57 (-0.76)	-0.852 (-2.42)**	-1.02 (-2.54)**

Panel B: Independently Financed/Independently Distributed vs. Studio Financed/Studio Distributed

Obs	Constant	Artist-driven dummy	COMREP	NUMFILM	NUMSQ	Genre Dummies (Drama is the omitted category)		
						Action	Comedy	Other
1 326	-0.993 (-4.82)***	1.440 (3.74)***	-0.06 (-3.04)***					
2 326	-0.622 (-2.70)***	1.34 (3.38)***	-0.034 (-1.87)*	-0.137 (-2.98)***	0.002 (2.40)**			
3 326	-0.190 (-0.54)	1.29 (3.19)***	-0.033 (-1.83)*	-0.143 (-3.04)***	0.002 (2.40)**	-0.493 (-1.03)	-0.954 (-1.90)*	-0.422 (-0.93)

Note: Figures reported are estimated betas and t-statistics (in parentheses.) This table presents the results of a multinomial regression predicting the whether films are independently financed/independently distributed, studio financed/studio distributed, or independently financed/independently distributed. A studio is defined as a domestic motion picture distributor involved in film finance. The films in the dataset are US produced films distributed in 1992 and 1993, as identified in the 1994 edition of *Film Index International*, the 1996 edition of the *International Motion Picture Almanac*, and the *Compact Variety* CD-ROM. These sources provide basic data on motion picture credits, distribution, and box-office performance. The chief sources for financing data are articles in weekly *Variety* magazine from January 1991 to December 1993. Previous cast credits and genres come from *Microsoft Cinemania '97*. Artist-driven films are defined as those films for which 1 individual serves as the writer, director, and producer or in which a producer and director collaborate on a script. The variable NUMFILM is the total number of films with which *FII* says the producer has been associated. NUMSQ equals NUMFILM squared. COMREP is the domestic box office performance of the producer's most recent previous film in millions of dollars.

* Significant at the 10% confidence level

** Significant at the 5% confidence level

*** Significant at the 1% confidence level

Table 4: Producer Reputation and Ability to Pay Star Salaries

Obs	Constant	Ind. Finance	Ind. Distribution	COMREP	COMREP interacted with Ind. Finance	Genre Dummies (Drama is the omitted category)		
						Action	Comedy	Other
1 320	23.06 (8.68)**	-5.52 (-1.40)	-12.31 (-2.22)**	0.09 (2.12)**				
2 320	24.55 (8.88)**	-9.53 (-2.13)**	-10.08 (-1.78)*	0.04 (0.73)	0.17 (1.87)*			
3 320	29.10 (7.59)**	-10.04 (-2.21)**	-9.81 (-1.73)*	0.03 (0.59)	0.16 (1.73)*	-9.03 (-1.92)*	-0.07 (-0.01)	-11.01 (-2.21)**

Note: Figures reported are estimated betas and t-statistics (in parentheses.) This table presents the results of a least-squares linear regression of the above variables on CASTBOX. CASTBOX is the domestic box office performance of the film's star's most recent previous film in millions of dollars. The films in the dataset are US produced films distributed in 1992 and 1993, as identified in the 1994 edition of *Film Index International*, the 1996 edition of the *International Motion Picture Almanac*, and the *Compact Variety* CD-ROM. These sources provide basic data on motion picture credits, distribution, and box-office performance. The independent finance variable is a dummy equal to 1 for independently-financed (non studio-financed) films and 0 otherwise. The independent distribution variable is a dummy equal to 1 for independently-distributed (non studio-distributed) films and 0 otherwise. A studio is defined as a domestic motion picture distributor involved in film finance. The chief sources for financing data are articles in weekly *Variety* magazine from January 1991 to December 1993. Previous cast credits and genres come from *Microsoft Cinemania '97*. COMREP is the domestic box office performance of the film's producer's most recent previous film.

* Significant at the 10% confidence level

** Significant at the 5% confidence level

Table 5: Prediction of Studio Marketing Effort Proxied by Number of Screens on which the Film Opens (Includes only Studio Distributed Films)

	Obs	Constant	Independent Finance	CASTBOX	COMREP	Genre Dummies (Drama is the omitted category)		
						Action	Comedy	Other
1	220	1196.84 (16.42)**	-411.30 (-4.10)**	4.10 (2.83)**	1.69 (1.71)*			
2	220	880.11 (8.98)**	-369.74 (-3.89)**	4.52 (3.32)**	1.67 (1.67)*	635.03 (5.26)**	483.46 (4.19)**	151.63 (1.12)

Note: Figures reported are estimated betas and t-statistics (in parentheses.) This table presents the results of a least-squares linear regression of the above variables on NUMSCR. NUMSCR is the number of screens on which a film opens, as reported in weekly *Variety*. The films in the dataset are US produced films distributed in 1992 and 1993, as identified in the 1994 edition of *Film Index International*, the 1996 edition of the *International Motion Picture Almanac*, and the *Compact Variety* CD-ROM. These sources provide basic data on motion picture credits, distribution, and box-office performance. The independent finance variable is a dummy equal to 1 for independently-financed films and 0 otherwise. A studio is defined as a domestic motion picture distributor involved in film finance. The chief sources for financing data are articles in weekly *Variety* magazine from January 1991 to December 1993. Previous cast credits and genres come from *Microsoft Cinemania '97*. The variable NUMFILM is the total number of films with which *FIL* says the producer has been associated. CASTBOX (COMREP) is the domestic box office performance of the film's star's (producer's) most recent previous film.

* Significant at the 10% confidence level

** Significant at the 5% confidence level

Table 6: "Net Profit" Calculation for a Hypothetical 1992 MPAA Studio Financed Production

<u>Receipts</u>		
Domestic Box Office Receipts	\$41,300,000	
(Less Exhibitors' Share)	<u>(\$20,650,000)</u>	
Domestic Theatrical Rentals		\$20,650,000
Foreign Theatrical Rentals		\$10,325,000
Total Home Video Sales	\$41,300,000	
Multiplied by 20% Royalty Rate	<u>* .20</u>	
Home Video Royalties		\$8,260,000
Other Sources (Includes Television, Merchandising, etc.)		<u>\$10,325,000</u>
Total Gross Receipts		\$49,560,000
<u>Distribution Fees and Expenses</u>		
Distribution Fee (30% of Total Gross Receipts)		\$14,868,000
Advertising	\$11,490,000	
Prints	\$1,970,000	
Other (Trade Fees, Taxes, etc.)	<u>\$3,365,000</u>	
Total Distribution Expenses		<u>\$16,825,000</u>
Total Distribution Fees and Expenses		\$31,693,000
<u>Negative Costs and Interest</u>		
Direct Production Costs	\$25,860,000	
Overhead	3,000,000	
Cast Participations	1,790,000	
Interest	<u>3,000,000</u>	
Total Negative Costs and Interest		\$33,650,000
<u>Net Profit (Loss)</u>		(\$15,783,000)

This table presents an estimated Net Profit (Loss) calculation for a hypothetical 1992 production. The domestic box-office performance figure is the average performance, as reported on the *Compact Variety* CD-ROM, of the MPAA member studio financed productions in my data set. Print, advertising, and production costs are 1992 averages from the Motion Picture Association of America (MPAA) electronic publication, "1997 US Economic Review: Theatrical Data." All other figures are my own estimates, based upon readings of industry sources. I draw heavily on Vogel (1998), chapter 4, for the

framework. Other important sources include Cones (1992), Litwak (1994), Squire (1992), and Weinstein (1997).

CHAPTER 3

A SIMPLE MODEL OF MONITORING AND CONTROL

Here I present a simple model illustrating the costs and benefits of investor monitoring and control. This model, based on those in Aghion and Bolton (1992), Hart (1995), Burkhardt et. al. (1997), and Cremer (1995), is presented to build intuition. I refer the reader to the above papers for a more in depth technical treatment of the issue.

The model takes as its basic framework the incomplete contracting approach developed in Grossman and Hart (1986) and Hart and Moore (1990). In this literature, investment inefficiencies arise when contracting parties cannot ex ante adequately describe which actions should be taken in all possible states of the world. Consider, for example, the case of movie editing: during the editing stage, the filmmaker assembles the raw film footage into the finished movie. One of the decisions made during editing is which scenes (and which takes of scenes) to keep and which to cut. It is impossible for a producer to pre-specify which take of a scene will be included in the completed film since he cannot predict, let alone describe, what the differences between the takes will be. Additionally, certain scenes deemed essential when the screenplay was written might turn out to be extraneous or confusing at the editing stage. Other hard-to-foresee events include spontaneous improvisations by actors and crew-member illnesses.

Contracts must then specify who has decision rights over the noncontractible situations. Either one party must make the decision or both must reach a negotiated settlement ex post. Inefficiencies generally occur when the party with control has the

opportunity to demand concessions from the other party when the decision is made. The prospect of ex post hold-up can lead to under- or over- investment in the earlier stages of the project.

In this model, the relevant ex post decision is whether or not an investor should intervene in the late stages of a project. This intervention can be thought of as the studio determining the editing decisions of the film. The advisability of intervention will depend on the costs to the entrepreneur in lost private benefits, which are partly dependent on a non-contractible random state of nature. The private benefits can be thought of as the producer's artistic, rather than commercial, reputation. I assume that this late-stage intervention is only feasible if the investor exerts some effort in monitoring the earlier stages of production. In the model, monitoring can actually create value rather than just passively preventing theft. As in a venture capital relationship (or reputedly in the case of Warren Buffet), the investor brings expertise not necessarily present in the management. The studio's position as distributor, for example, places it in a position to better judge market conditions than an independent producer/director. Monitoring may not always be optimal, however. First, if the entrepreneur is wealth constrained, he may be unable to bribe the investor not to intervene when private costs are too high. Secondly, the threat of intervention may lead the entrepreneur to exert less effort in developing the project.

The Model Structure

Consider the case of a risk-neutral entrepreneur seeking K dollars from a risk-neutral wealthy investor. Assume that the number of potential investors is large enough that the entrepreneur can make a take-it-or-leave-it offer to the investor. Assuming a

zero-percent interest rate, the investor will provide the capital as long as her expected payout is greater than or equal to K .

Suppose the project yields monetary returns, m , which can be promised to investors, as well as private benefits, b , which cannot (private benefits are defined so that the entrepreneur is indifferent to one unit of b and one dollar). I assume that the entrepreneur's final payout will take the form of the private benefits plus a transfer payment, T . For sake of simplicity, I assume that T cannot be made contingent upon the monetary returns of the project. Thus the investor receives all the monetary payout of the project less T . This assumption, not uncommon in the literature, is meant to isolate the effects of monitoring from the effects of incentive contracting. Burkhart, et. al. (1997) show that monetary incentive contracts do not necessarily make monitoring redundant in general. That is, in their model, even if the entrepreneur is given a stake in the firm's profit, proper allocation of control can still increase economic efficiency.¹⁸

The assumption that the entrepreneur's payout cannot be made contingent upon m is particularly appropriate in the case of the contract between a movie studio and a producer. As the distributor of the movie, the studio controls the accounting of profit and loss for that movie. It is in the studio's interest to manipulate the definitions and reporting of profit and loss in its favor. Since the Hollywood definition of "Net Profits" is a contractual rather than economic figure, net profit sharing agreements rarely pay off, even for films which seemingly exceed standard economic definitions of profitability (Cones,

¹⁸ Note that, in theory at least, managers can be given identical incentive contracts at the time of financing regardless of control regime. In general, though, allowing incentive contracts to vary with control regime will improve efficiency. Deriving optimal contracts becomes difficult in these cases since the investor's incentives must be considered along with the entrepreneur's. Examining the practical

1995). A well-cited case as regards this issue is the film *Coming to America*. *Coming to America* reportedly earned \$140 million in gross receipts and was one of the top 20 highest grossing films of the 1980's¹⁹. Yet according to distributor Paramount's accounting, the film lost \$15 million dollars. In his lawsuit against Paramount seeking a share of the film's profits, writer Art Buchwald claimed that the amount spent on actual production was only \$23 million.²⁰ See Appendix A, as well as Goldberg (1997), Weinstein (1998), and Chisholm (1997) for further discussion of profit-sharing contracts in the motion picture industry.

The model has 4 dates. At date 1, the entrepreneur raises and invests the investor's capital and is promised a transfer payment T_0 . At date 2, the entrepreneur undertakes an effort, with a monetary-equivalent cost e , which results in an intermediate-stage firm value:

$$V_i = b_i(e) + m_i(e)$$

I assume that b_i and m_i are continuous, increasing, concave functions of e with all the regularity assumptions necessary to guarantee an interior solution for e . I assume e is observable by the investor but not verifiable. Simultaneously, the investor chooses whether or not to invest a fixed amount M to become familiar enough with the firm's

interrelationships between financial incentive contracts and control allocation in the motion picture industry is a potentially promising area for future empirical research.

¹⁹ Financial data for *Coming to America* and details of Buchwald's lawsuit are drawn from Litwak (1994). Gross receipts are defined as all revenues that accrue to the studio and filmmakers from all sources, including theatrical, video, pay TV, etc. Note that the portion of box office receipts which accrues to exhibitors is not included in this figure. The items subtracted from Gross Receipts when calculating Net Profits include percentage distribution fees, distribution expenses, production costs, overhead, interest, and payments to Gross Profits participants.

²⁰ Paramount's estimated negative cost was \$63 million.

operations to effectively intervene at date 3. I subsequently refer to this investment M as “monitoring.” At date 3, a random state of the nature, c , is revealed and the investor may choose to intervene if she is informed enough to do so. At this point the transfer payment, T , may be renegotiated. Whether or not the investor intervenes is assumed to be negotiable at this date. At date 4 final payouts are realized.

The monitoring technology involves a transfer from private to monetary benefits (as when a studio changes the ending of a movie to increase its commercial appeal.) Should she intervene, the investor can increase m by x percent, so final m equals:

$$m = m_i + xm_i$$

The assumption that intervention increases m by a fixed percentage implies that the potential returns to monitoring are larger for relatively larger projects. For each dollar m is increased in this way, b is reduced by c dollars, so final b equals:

$$b = b_i - cxm_i$$

The random state of nature, c , thus represents the marginal cost to the entrepreneur of shareholder intervention. b_i is assumed large enough relative to m_i that b will always be positive. I assume $c = E(c) + \gamma$ where $\gamma \sim N(0, \sigma)$. I assume $E(c)$ and σ are common knowledge ex ante. Intervention will be ex post optimal when $c < 1$. Note however that, in some cases, even when $c < 1$, intervention may not be ex ante optimal because of incentive effects on the entrepreneur’s effort. I assume that the state of nature is noncontractible so that a contract cannot specify in which states of the world the

investor will intervene.²¹ I denote the ex ante probability that $c < 1$ as p and the probability that

$$c \geq 1 \text{ as } 1 - p.$$

In a first best world, the investor and entrepreneur will cooperate to maximize total surplus. The investor will always invest M when the expected value of monitoring exceeds M and, if this investment is made, will intervene when $c < 1$. The entrepreneur will choose e to maximize total surplus. When date 2 monitoring is optimal, e will solve:

$$\max_e (1 - p)[m_i + b_i] + p[m_i + b_i + xm_i - E(c / c < 1)xm_i] - e - M$$

when date 2 monitoring is not optimal, he will solve:

$$\max_e mi + bi - e$$

This optimal level of effort is henceforth referred to as e^* .

Distortions occur because of the entrepreneur's wealth constraint, the resulting need for an outside investor, and the necessity for renegotiation caused by the noncontractibility of c .

Entrepreneur vs. Investor Control

I now investigate how the initial contract may optimally delegate control rights. Specifically, I investigate under which circumstances entrepreneur control is optimal and under which circumstances investor control is optimal. The definition of control in this model is the right to choose whether or not shareholder intervention takes place. Whether the investor or the entrepreneur has control decides the status-quo point of any

²¹ I rule out stochastic control mechanisms and so-called Maskin mechanisms (Maskin, 1977) where final payouts are contingent on the parties' announcements of the state of nature. See Appendix 1 in Aghion

renegotiations. This control is only meaningful when the monitoring investment M is made. Otherwise intervention never occurs.

Entrepreneur Control

Intervention never occurs under entrepreneur control unless renegotiation occurs. The reason for this is that intervention simply reduces entrepreneur private benefits without any corresponding increase in T . If renegotiation is allowed, intervention will occur when profitable ($c < 1$) and feasible (M invested). I assume any gains to intervention are split 50/50 between the investor and the entrepreneur (the Nash bargaining solution). The form of this split will be an increase in the transfer payment, T , from the investor to the entrepreneur.

SIMPLIFYING ASSUMPTION 1: $M > .5(p)[xm_i(e) - E(c/c < 1)xm_i(e)]$ for all e in the relevant range.

This assumption guarantees monitoring and intervention will never occur under entrepreneur control. The ex post gains from intervention, assuming the sunk cost of M is made, are $xm_i(e) - cxm_i(e)$ and these benefits occur with probability p (that is, when $c < 1$.) However, the entrepreneur is able to extract 50% of these gains. Therefore if the investor's monitoring investment, M , is greater than his expected payout from monitoring, she will never monitor in the first place.²² Hence in this model, the cost of entrepreneur control then is the loss of value-enhancing monitoring.

Under entrepreneur control, then, the entrepreneur chooses e to solve:

and Bolton for a discussion of Maskin mechanisms in financial contracting.

²² In Burkhardt, et.al.'s model, the degree of investor monitoring is endogenous to the choice of ownership concentration. The model in this paper assumes that one investor owns all the outside equity. When the large investor owns less than 100% of the firm's equity, her incentives to monitor will be lower.

$$\max_e bi + T_0 - e$$

This effort level (henceforth called $\hat{e}$) is always strictly less than e^* since the entrepreneur pays all the marginal costs of effort without receiving all the marginal benefits. However, as I will show, it is higher than that under investor control. Note that if $m_j(\hat{e})$ is less than K , entrepreneur control will be infeasible since he will be unable to guarantee the investor a fair return on his investment.

Investor Control

Note that investor control is equivalent to entrepreneur control in cases where investment M is never made. Hence for the discussion of investor control, I will assume that monitoring is indeed undertaken. The status-quo point under investor control is for the investor to always intervene since she reaps the benefits and does not pay the variable costs. Whether or not renegotiation occurs depends on the wealth of the entrepreneur. When the entrepreneur has insufficient wealth, he cannot bribe the investor not to intervene. In either case, entrepreneur effort will be lower than in the case of entrepreneur control.

Consider first the case of the entrepreneur with zero wealth. Since intervention will always occur, the entrepreneur will choose effort to maximize:

$$\max_e b_i + T_0 - E(c)xm_i - e$$

Since $E(c)xm_i$ is an increasing function of effort, effort will be less than $\hat{e}$, which is already less than e^* .

When the entrepreneur has enough wealth (for example, if the transfer payment is made up front and is large enough) the entrepreneur can bribe the investor not to intervene

when it is not ex post optimal (when $c > 1$.) He pays an amount equal to half the gains from not monitoring, or $.5(c - 1)xm_i$. He thus chooses ex ante effort to maximize:

$$\max_e (1 - p) [b_i + T_0 - .5(E(c/c > 1) - 1)xm_i] + p [b_i + T_0 - E(c/c < 1)xm_i] - e$$

This level of effort, greater than that with wealth constraints, is still less $\hat{e}$. I will refer to the effort level under investor control as $\tilde{e}$. Another potential cost of investor control is that the investor may choose to invest in M when that investment is not optimal. He will weight the possible hold-up gains in his decision as well as the true benefits of monitoring.

Implications for Control Allocation

Before examining the key implications of the model, I will make three more simplifying assumptions and several definitions.

SIMPLIFYING ASSUMPTION 2: $M \leq p[xmi(e) - E(c)xmi(e)]$ for all e in the relevant range.

This means that monitoring has a positive expected ex post value. It also means that monitoring will always occur under investor control. This does not mean it has a positive ex ante value when incentives are considered, however.

SIMPLIFYING ASSUMPTION 3: *The entrepreneur has enough wealth to renegotiate under investor control.*

These two assumptions insure that the investor does not overinvest in monitoring relative to first-best levels. I make these assumptions to show that the distorted effort incentives related to holdup are enough by themselves to justify entrepreneur control in

some situations. Relaxing these assumptions would only increase the number of situations in which entrepreneur control is optimal.

SIMPLIFYING ASSUMPTION 4: $m_i(\hat{e}) > K$

This assumption simply ensures that entrepreneur control is feasible. Otherwise, the investor cannot earn a sufficient return on her investment.

I define G as the gains to investor control relative to entrepreneur control and C as the costs of investor control relative to entrepreneur control. G is the expected gains to monitoring, which, given the assumptions above, means

$$G = p[xm_i(\tilde{e})(1 - E(c/c < 1))] - M$$

C will be the losses in intermediate firm value (net of effort cost) from lower entrepreneur effort under investor control, so

$$C = [b_i(\hat{e}) + m_i(\hat{e}) - \hat{e}] - [b_i(\tilde{e}) + m_i(\tilde{e}) - \tilde{e}]^{23}$$

When G exceeds C , investor control will be optimal. When C exceeds G , entrepreneur control will be optimal.

PROPOSITION 1: *When the entrepreneur's effort decision is relatively unimportant ($b_i(e^*) + m_i(e^*) = b_i(0) + m_i(0) + \varepsilon$, and $b_i(0) + m_i(0)$ sufficiently large), investor control is optimal.*

The proof of this proposition is intuitive. The cost of investor control is distorted effort. If the cost of distorted effort is very low, the benefits of monitoring will outweigh the costs of lower effort. Formally, as ε goes to zero, C goes to zero while G remains positive.

23 A revealed preference argument insures that the left term will always exceed the right term in C .

PROPOSITION 2: When the expected marginal private benefit cost of monitoring ($E(c)$) is high enough, entrepreneur control is optimal.

The proof is again intuitive. When c is expected to be high, hold-up costs are expected to be high. Giving control to the entrepreneur avoids these costs. Formally, note that as $E(c)$ increases, p goes to zero, implying that G goes to zero. Since C remains fixed, this implies that investor control will be overly costly. The strict superiority of entrepreneur control in this situation depends on the assumptions above which insure that monitoring always occurs under investor control. If these assumptions are dropped, entrepreneur control still weakly dominates investor control when $E(c)$ is high.

A Note on Contingent Control

The fact that c is noncontractible in the model rules out contingent control. One could, however, add to the model a contractible noisy signal of c and allow control rights to depend on that signal. One can imagine that such an arrangement could prove superior to either outright entrepreneur or investor control in some situations. Such an extension (borrowed from Aghion and Bolton) would not destroy the basic intuition of the model. The basic tradeoff between optimal monitoring and optimal effort would still be present when comparing outright investor control with contingent control.

Summary and Empirical Implications

The model above presents a tradeoff between better effort under entrepreneur control versus better monitoring under investor control. The model predicts that entrepreneur control will be more common when the expected direct costs of outside interference are high. It also predicts that investor control will be more common when managerial effort is relatively unimportant. The findings of my empirical investigation of

motion picture financing decisions, presented in the remainder of this paper, are consistent with both of these predictions. The relative prevalence of dual class share listings and managerial control in the media industry (as documented in Demsetz and Lehn, 1985) is also consistent with the intuition of the model.

CHAPTER 4

PRODUCT MARKET COMPETITION AND MANAGERIAL CONTRACTING²⁴

“The best of all monopoly profits is a quiet life” -Hicks (1935)

A literature dating back to Hicks (1935) suggests that competition may play an important role in the determination of management incentives. Indeed several authors have suggested that a significant benefit of competition is a reduction in managerial slack when managers are exposed to the discipline of a competitive product market (Leibenstein, 1966; Machlup, 1967). Assessing whether competition does play such a role could have important implications for our understanding of the factors governing management incentives and corporate performance. Additionally, this issue has potentially important implications for regulatory policy and antitrust policy.

Several theoretical papers have attempted to formalize the effect of product market competition on management incentives. These papers vary by their focus on what important differences might exist between more competitive environments and less competitive environments.²⁵ One strand of this theoretical literature examines differences in the information content of performance measures, another examines differences in the

²⁴ This chapter originated as a second-year paper by the author in the Ph.D. program at the University of Florida. Subsequent research was performed jointly with Charles Hadlock of Michigan State University. The dissertation committee believes the material reflects a sufficient level of original and scholarly work by the author to merit inclusion in the dissertation.

²⁵ A partial list of relevant theoretical investigations includes Fershtman and Judd (1987), Hart (1983), Hermalin (1992), Holmstrom (1982), Nalebuff and Stiglitz (1983), Scharfstein (1988), and Sklivas (1987).

role of managerial inputs, and a third strand examines differences in the strategic role of incentive contracts. In general these theoretical investigations indicate that the effect of an increase in competition on managerial effort levels is ambiguous in sign, and furthermore that the relationship between competition and managerial contracting is quite sensitive to the exact modeling assumptions employed. Thus theory does not confirm that the observation by Hicks (1935) should hold universally.

Despite the numerous theoretical investigations in this area, there has to date been little direct empirical evidence concerning the role of the product market environment on the implicit or explicit contractual relationship between a firm's owners and its key managerial employees.²⁶ In this paper we provide evidence on this issue by examining a unique data set derived from the U.S. newspaper industry for 50 large cities over the 1950-1993 time period. Our approach is similar in some ways to Chevalier (1995) in that we exploit variations in product market competition across local markets. A particularly attractive feature of the industry we choose is that the product market structure of each local market is relatively easy to identify while at the same time exhibiting considerable variation across the sample.²⁷

26 Several papers that do not focus on these questions can be reinterpreted as providing indirect evidence on this set of issues. We will discuss these below. A recent empirical paper by Nickell (1996) examines the relationship between competition and corporate performance, but he does not empirically examine questions directly related to managerial contracting. Recent papers by Aggarwal and Samwick (1996) and Kedia (1996) directly examine a similar set of issues to the ones we consider and we discuss their results below.

27 We are certainly not the first to examine the effects of competition in the newspaper industry. There is a large journalism literature on the effect of newspaper competition on newspaper quality and content (e.g. Busterna, Hansen, and Ward, 1991). In previous research economists have examined the role of newspaper competition on prices (see for example Ferguson, 1983). See Rosse (1967, 1978) for a discussion of newspaper demand and the nature of newspaper competition. We do believe this is the first study of the role of newspaper competition on issues related to management.

Management compensation data, which is often used to analyze questions related to incentives, was not available for our sample. However, we are able to use industry trade publications to document job turnover for 6 key management positions in a sample of 4478 newspaper-years.²⁸ Our analysis thus focuses on the empirical relationship between product market structure and management turnover, as well as the implications of these findings for our general understanding of the connection between product market competition and managerial contracting.

Our findings are consistent with the assertion that there is a difference in management incentives between competitive and monopolistic markets. Specifically, we find evidence that for key managerial personnel there is significantly more job turnover in competitive markets than there is in monopolistic markets. This effect appears to be particularly pronounced when we restrict our attention to individuals with relatively short tenures as high-level managers with their employer. These findings are robust even after controlling for ownership characteristics and market characteristics that might affect job turnover. Thus, if one interprets less job turnover as a feature of “a quiet life,” our findings provide empirical support for the assertion of Hicks (1935).

The results we report are not able to perfectly distinguish between the competing explanations as to *why* competition might affect managerial incentives and job turnover. We argue below that given the structure of our data and the industry, the results we report are unlikely to be explained by strategic theories. However, the results do appear to be

²⁸ Jensen and Murphy (1990) point out that for CEOs the importance of turnover policies in generating incentives is of similar magnitude to compensation policies. Additionally, if managerial ability is a more important determinant of profits than managerial effort, understanding turnover behavior will be of primary importance in understanding the role of competition in managerial contracting.

consistent with two other strands of the literature. In particular, the results are consistent with the hypothesis that competition affects the information that is used by the firm to evaluate a manager, or alternatively the information that is used by both the firm and the manager to evaluate the quality of the employee-employer match. We label this idea the information hypothesis. Our results also appear to be consistent with the notion that changes in the degree of competition change the importance of managerial ability and/or effort in the determination of profits, an idea that we term the managerial technology hypothesis.

In an attempt to distinguish between these hypotheses, we find that turnover probabilities increase when a newspaper's competitors performs well. Additionally, we find that the sensitivity of job turnover to a newspaper's own performance does not differ significantly between competitive and monopoly markets. These two findings cast doubt on the conclusion that the managerial technology hypothesis is the sole explanation for our results, although it certainly could be part of the story.

The paper is organized as follows. We first briefly review the varying theories of the role of competition on management incentives. We attempt to emphasize exactly what these theories might say about observable economic data concerning both managerial employment contracts in general and job turnover in particular. Additionally we briefly review the findings in the existing empirical literature on management incentives and management turnover that are at least indirectly related to the role of product market competition. We then describe the construction of our data set and some summary statistics. Next we present our empirical findings. Finally, we discuss the results and conclude.

Previous Literature

Theory

Information based theories

The presence of competitors may generate information relevant in assessing the performance of a firm's manager. For example, if a firm in a competitive industry has high profits when its competitors have low profits this may indicate that the firm's management was either skilled (high ability) or hard working (high effort). The work of Lazear and Rosen (1981), Holmstrom (1982), and Nalebuff and Stiglitz (1983) suggests that the information generated by the presence of competitors can be used to implement more efficient incentive schemes than would be possible without the information. We refer to the use of additional information generated by the presence of a competitor as relative performance evaluation (RPE).

The role of RPE on empirically observed management turnover is unclear. There are two ways to view turnover outcomes. One view is that terminating a manager is part of an implicit contract to give the manager an incentive to work hard; termination is a punishment outcome as in Harris and Raviv (1979) and Lewis (1980). If competition generates very precise information about managerial effort, there may never be an equilibrium event where this punishment is utilized. Thus it is possible that RPE in competitive markets might lead to less job turnover.²⁹

²⁹ Harris and Raviv (1979) show that when information about a manager's effort becomes more precise the equilibrium probability of dismissal decreases.

An alternative view of turnover outcomes is that they reflect a state of the world where either the firm or the manager concludes that they are not a good match.³⁰ For example, the firm might terminate the manager if it believes that the current manager is not as good as his best replacement. If the possibility of RPE under competition generates very precise information about the ability of a manager or the quality of a match, then an increase in competition could lead to more job turnover as low ability managers or low quality matches are discovered more quickly. In summary, RPE predicts a role for competition in managerial turnover, but the direction of the effect may depend on whether effort evaluation or ability learning is the dominant concern in the determination of turnover behavior. In any case, if RPE is important and is affected by competition, we should observe management turnover systematically varying by the intensity of product market competition.

Models by Hart (1983) and Scharfstein (1988) assume away RPE effects and focus on how competition may change the distribution of a firm's own performance measures. In the presence of a hidden information problem between the manager and the firm, the change in the distribution of the firm's performance measures when the intensity of competition changes can either alleviate or exacerbate the basic incentive problem. In contrast to popular wisdom, Scharfstein's (1988) results indicate that optimal contracts in more competitive environments may in fact lead to more managerial slack.³¹ In

30 The top management incentives literature generally considers management turnover decisions as being made primarily by the firm (e.g. Hermalin and Weisbach, 1997), where the labor literature (e.g. Jovanovic, 1979) emphasizes the two sided nature of job separations and often makes no distinction between quits and firings.

31 Hart (1983) and Scharfstein (1988) both model increased competition as an increase in what they call "entrepreneurial" firms.

particular, as competition increases lower wages are paid in low states of productivity so that the manager will not shirk in high states of productivity. If we view a job turnover outcome as similar to a very low wage, his model could loosely be interpreted to imply more job turnover as competition increases.

In our view these models based on hidden information problems are less relevant than the RPE theories for the situation we examine in that they make some strong assumptions about the limited information available to firms in their contracting with managers. For example, the Hart (1983) and Scharfstein (1988) models assume that the owners of a firm do not observe how a firm's competitor is performing, and thus that RPE is impossible. Nevertheless, it is entirely possible that competition could change the distribution of a firm's own performance measures and therefore also change the contracts offered to managers in the presence of a hidden information problem. We refer to this type of possibility as the own performance evaluation effect (OPE). Since this effect and the RPE type effects both are concerned with competition affecting managerial contracting by changing information flows, we group them together into what we call the information hypothesis.

Managerial inputs

Hermalin (1992) presents a model where there are three non-informational ways for competition to affect managerial incentive schemes. Two of these effects are driven by his assumption that the agent (manager) makes an offer to the principal (shareholders).³²

³² One of these two effects identified by Hermalin (1992) is an income effect that reflects the manager's bargaining power. The other effect he identifies, the risk-adjustment effect, would also not appear if the manager had no bargaining power. Essentially this effect derives from the fact that a contract that will induce a certain action at one level of competition cannot necessarily be offered at a different level of

While this assumption may be a realistic description of the negotiations between a CEO of a large publicly traded firm and the firm's board of directors, the data we examine below is primarily for closely held firms where this assumption is not likely to be relevant.

Additionally, we look at several managerial positions below the top executive level where this assumption clearly does not hold.

The observation identified by Hermalin (1992) that is important for our study is the possibility that the returns to managerial effort or ability may differ between competitive and monopolistic environments. For example, suppose in a competitive industry a firm with a high ability manager can steal market share from firms with low ability managers. Under this scenario, firms in competitive industries might frequently replace key managers after the ability level of the manager is discovered. In a monopoly market the firm has a market share of 100%, and thus identifying and eliminating low ability managers may be less important in these markets. Of course it is possible that managerial ability is actually more important in monopolies than in competitive situations, but we find this argument less plausible. In any case, if the importance of managerial inputs varies by the product market environment, there should be observed differences in management turnover depending on product market characteristics.³³ We refer to this possibility as the managerial technology hypothesis.³⁴

competition since shareholders receive the same expected return in all product market environments. See Hermalin (1992) for a discussion of these issues and also a nice discussion of the other theoretical papers in this literature. The change-in-the-relative-value-of-actions effect Hermalin (1992) discusses is the same as the managerial technology hypothesis we discuss below.

³³ When the value of effort rather than ability varies by the degree of competition the empirical predictions are more subtle. If high effort is more important in competitive industries we would expect incentive contracts to be structured to induce higher effort on average. One could do this with rewards for good performance or penalties for poor performance. If turnover events reflect a penalty outcome for poor performance, we might expect more turnover in markets where effort is more important. The problem

Strategic theories

Several recent papers consider the possibility that managerial incentive contracts will be influenced by strategic considerations.³⁵ Suppose, for example, that a firm has an incentive to act "tough" if this will induce his competitor to act "weak." These studies point out that one credible way for a firm to commit to act tough is to provide the firm's manager with an incentive scheme that rewards tough behavior. For example, the firm may want to reward the manager based on sales rather than profits.

In general the impact of strategic considerations on incentives depends on the nature of product market competition and on the set of feasible contracts considered. Aggarwal and Samwick (1996) allow management compensation contracts that depend on a firm's profits and its competitors' profits. They show that under Bertrand competition managers will generally be rewarded when either their firm or their competitor experiences high profits. Under Cournot assumptions they find managers will be rewarded when their firm does well or their competitor does poorly. They present empirical evidence based on CEO compensation contracts that is consistent with the Bertrand scenario. Kedia (1996) allows compensation contracts to depend on a firm's own profits and own revenues, and shows theoretically that the weight placed on profits in the optimal compensation contract

with this argument is that what we observe in the data is not a dimension of the contract itself (threat of punishment), but rather a combination of the contract and the managers reaction to the contract (punishments actually imposed). In any event, if competition does affect the value of having hard working or high ability managers this should generate observable differences in the data.

34 Another difference in the importance of managerial inputs across product market environments may arise from differences in the importance of firm specific human capital. In environments where firm specific human capital is more important, we would expect senior managers to depart from their firms at comparatively low rates. We view this possibility as part of the managerial technology hypothesis.

35 See for example Fershtman and Judd (1987), Sklivas (1987), Aggarwal and Samwick (1996), and Kedia (1996).

depends on the nature of competition (i.e. strategic substitutes versus complements). Using empirical proxies for the form of competition between firms, she finds empirically that CEO pay-performance sensitivities depend on the form of competition in the hypothesized way.

While strategic considerations may play a role in management incentives, they should not play a large role in our analysis. In particular, the results in these theoretical models depend on the assumption that management incentive contracts are publicly observable. Most of the firms we examine are private firms and thus they do not report any public information on management incentive contracts. Even for the public firms in our sample, data on the incentive contracts of most of the individuals we study would not typically be subject to disclosure requirements. It is interesting to note that the character of the results we report below differ in important ways from the findings of both Aggarwal and Samwick (1996) and Kedia (1996). Determining whether these differences are caused by different levels of disclosure concerning incentive contracts is an interesting question for future examination.

Empirical Evidence

To our knowledge, with the exception of the studies discussed above, there has been little previous empirical work directly examining the role of competition on managerial contracting. Phillips (1995) documents contemporaneous changes in product market behavior and executive compensation contracts in a sample of firms from industries with large changes in capital structure. While far from conclusive, this evidence is at least consistent with a link between competition and managerial contracting.

Some additional indirect evidence can be inferred from the literature on management incentives in regulated firms. Joskow, Rose, and Shepard (1993) find that pay levels and pay-performance sensitivities are lower for regulated firms than in non-regulated firms. Parrino (1993) finds less management turnover and lower turnover-performance sensitivities in regulated electric utilities than in other firms. Hubbard and Palia (1995) find that for banking firms the elimination of interstate banking restrictions resulted in a significant increase in managerial pay, turnover, and an increased sensitivity of pay to firm performance. If one interprets regulated markets as less competitive than non-regulated markets, these results suggest that the management employment relationship does vary with competition.³⁶

Despite their suggestive results, it is hard to interpret these studies as providing evidence on how competition affects managerial contracting. The scope of managerial activities can be severely altered under regulation. Additionally, the oversight of regulators might place a direct constraint on managerial contracting due to the political nature of the regulatory process (Joskow, Rose and Shepard, 1993). Thus these studies leave unanswered whether competition by itself plays a role in the relationship between a manager and a firm.

³⁶ Hadlock and Lumer (1997) find a significant increase in management turnover and the use of incentive compensation for industrial firms over the past 60 years. If product markets have become more competitive over this time period, their findings would be also be consistent with this conclusion.

Construction of Sample

Sample Selection

Constructing a sample of observations with a substantial number of competitive newspapers required that our panel extend over a long time period. Consequently, we drew our initial sample from the 50 largest U.S. cities in 1950 ranked by city population in the 1950 U.S. census. From this initial list of cities we collected data on newspapers in these markets from the start of 1950 to the end of 1993. The chief source of this data was the *Editor and Publisher International Yearbook* (the *International Yearbook* hereafter).

For each city-year we collected data on all English language newspapers that had a daily circulation that was at least 20% of the daily circulation of the newspaper with the highest daily circulation in the city.³⁷ We excluded business newspapers and the few special newspapers that were national in scope such as *USA Today* and *The Christian Science Monitor*. Once a newspaper entered the sample it stayed in the sample even if its circulation fell below the 20% threshold. As reported in table 7, our final sample has 4478 newspaper-years representing 2200 city-years.

For each newspaper-year we collected data on the corporate owner of the newspaper. Much of this information was gathered by following the listings of the composition of newspaper chains reported in the *International Yearbook*.³⁸ We consider a chain to have owned a newspaper in our sample in a given year if it had a reported majority interest in the newspaper. Whenever there was any ambiguity about who

³⁷ In the case of New York City we restricted our attention to newspapers listed under the Manhattan borough. This listing included all of the major city-wide newspapers.

³⁸ A newspaper chain is any corporate entity owning newspapers in two or more cities.

controlled a newspaper we go directly to the weekly issues of the trade publication *Editor and Publisher* to collect the relevant information. If a newspaper was not part of a chain we recorded its corporate owner to be the publishing company that published the newspaper.

For many city-years in our sample there were two commonly owned or operated newspapers in a given city. In what follows, we refer to a pair of newspapers in the same city that were owned by the same corporate entity as twins. Most monopoly markets in our sample were composed of a pair of these twins, where a single firm published both a morning newspaper and an evening newspaper. Additionally, in some cases in our sample two newspapers were independently owned but commonly operated under what is known as a Joint Operating Agreement (JOA). The management and editorial structure of newspapers operating under these JOA agreements was very similar to newspapers that were under common ownership. In particular, the business operations and management of pairs of both commonly owned and JOA newspapers were typically merged into one unit. Given these similarities in management structure, we consider all pairs of JOA newspapers to be twins. We refer to any two newspapers that were not twins with one another to be independent.

After identifying all pairs of twins, we defined a city-year to be competitive if there were two or more newspapers in the city that were independent of one another at the start of the year. This definition is a strict one in the sense that it requires that every newspaper in what we defined to be a competitive market had at least one other newspaper in the same market that was owned and operated by a completely independent entity. All non-competitive city-years are referred to as monopoly markets. As is reported in table 7,

48.4% of the newspapers in our sample operated in competitive markets. Table 7 also illustrates that the number of competitive markets has decreased substantially since 1950.

Management Turnover Data

The annual volumes of the *International Yearbook* identified the key management and editorial personnel of each individual newspaper at the start of the year. We collected data from the start of 1950 to the start of 1994 on the individuals who served in each of 16 different high level positions reported in the 1950 *International Yearbook*.³⁹ After collecting this data it was apparent that many of the positions were not consistently reported over time or were missing for a large fraction of observations.⁴⁰ Since our focus is on comparing the job turnover of individuals performing similar tasks across newspapers, choosing important positions that were widely and uniformly reported over time was essential. We adopted as a condition for a position to be included for further turnover analysis that the position be unambiguously reported for at least 80% of the sample.⁴¹ This condition left us with 6 key positions: the president, circulation manager, advertising manager, classified advertising manager, managing editor, and sports editor.

39 The 1950 *International Yearbook* systematically reported data on 20 different positions. We did not record the names of the manager of retail advertising, general advertising, or the advertising promotion manager. We wanted to focus on key managerial personnel and we already were collecting data on the most important member of the advertising department--the advertising manager. Amongst his/her subordinates the classified advertising manager appeared to be the most well defined and frequently reported. Given the high costs of data collection the additional advertising positions seemed unnecessary to examine. Additionally, we collected no data on the Society editor position since the position was not generally listed after 1960.

40 Several of the business positions were reported with very low frequency. Additionally, one position stopped being reported during the sample period (the mechanical superintendent). Several editorial positions were hard to distinguish from one another and were often ambiguously reported.

41 As reported below, twin newspapers typically had a single business department. The 80% figure for the business positions is calculated counting each set of twin newspapers as a single unit.

Descriptions of the responsibilities associated with each of these 6 positions are reported in the appendix.

After identifying these positions as the ones for further analysis, we collected additional data on the individuals that held these positions and their job movements. In what follows we refer to the circulation manager, advertising manager, and classified advertising manager positions as the business positions, while the managing editor and sports editor positions are referred to as the editorial positions. For pairs of twin newspapers there were important reporting differences between the business and editorial positions.

For twin newspapers, the president position and the business positions were usually shared by both twin newspapers as can be seen in table 8. For each of these four positions, approximately 80% of all pairs of twin newspapers reported a single individual serving the two newspapers. In contrast, for the two editorial positions approximately 80% of all pairs of twin newspapers reported different individuals serving each newspaper.

Since twin newspapers are by definition commonly owned or operated, we treated each twin pair as a single observation when examining management changes for the president and business positions. When we refer to a newspaper in the context of these positions, we are considering a pair of twin newspapers to be a single newspaper. In the small fraction of cases where the twin newspapers had two individuals in one of these positions in a given year (one at each newspaper), we assign the single position for the pair of twins to the manager with a longer tenure.⁴² This is intended to capture the

⁴² The results we report in the regressions below are qualitatively unchanged if we exclude all observations where there are two individuals in a pair of twin newspapers serving in one of these

likelihood that the senior of the two managers is the one who was held accountable for how the twin newspapers performed in the given dimension.

As reported above, each newspaper in a pair of twins typically had a separate editorial staff. Given the common ownership and/or management of twins, these staffs clearly did not have the same incentives to compete with one another in the way that they would compete with an independent newspaper. We take these features into account by examining the turnover behavior of all individuals who served in the editorial positions, but maintaining the definition of a competitive market as one where two independent newspapers operated. When we refer to a newspaper in the context of the editorial positions, we are considering each newspaper in a pair of twins to be a separate observation. However, when we refer to a competitor in the context of these positions, we are referring to an independently owned and operated newspaper in the market and not to a twin newspaper.

For each of the 6 positions, we identified every instance where an individual was in a position at the start of one year and was not in the same position with the same newspaper in the following year. With this set of events we returned to the *International Yearbook* and examined whether the individual moved to another position within the newspaper by looking at every position reported for the newspaper in the following year

positions. We measure tenure as the number of years the individual served in any of the 16 originally recorded positions in any newspaper in the city as of the start of the observation year. For managers in the sample as of 1950, we traced their job histories back through the 1930 *International Yearbook*. Defining tenure as the number of years in any reported position in the city rather than the number of years in a specific position in the newspaper allowed us to economize on accounting for and sorting out mergers, consolidations, and ownership changes for newspapers in this 1930 to 1950 period. The data for managers who first appear in the sample after 1950 indicates that these two potential definitions of tenure are highly correlated.

including non-standard positions that are not in the original set of 16. We also examined whether the individual moved to any of the 16 originally tracked positions in any other newspaper in the sample, and if so whether the move was within a chain or to a new chain.⁴³

Before analyzing the turnover data, we should note that the president of the newspaper was often also the publisher of the newspaper and sometimes was the president of the chain that owned the newspaper.⁴⁴ Thus while the president position satisfied the criteria for inclusion in the turnover examination, in our view the analysis of this position is less informative than the other positions for the purposes of our study. In particular we are concerned that in many chains the president was only a figurehead, and for both chains and non-chains the president might often have had a large stake in the newspaper or its corporate parent. Since under either of these scenarios treating the president as an important agent serving an independent principal would be inappropriate, we are hesitant to place significant weight on the results for this position. Additionally, the turnover behavior of the president might have more to do with external control changes for which our data is incomplete rather than with the internal workings of the firm.⁴⁵

43 In some instances the managers in our sample are moved up to general positions that appear to be created for them such as Vice President. Since our data set includes almost all of the important management and editorial positions for the largest market's in the country, we should be able to track most lateral moves and promotions within the labor market.

44 We should note that if we restrict our analysis to the subsamples where the president is the publisher whenever the newspaper reports a publisher, then the results we report below for the president position are virtually unchanged.

45 We do have data on some control changes. As noted above, we can track every instance where a newspaper had a new corporate owner. However, as most of these newspapers were published by private companies, we cannot track instances where an individual purchased a company publishing a newspaper and appointed himself president and/or publisher of the newspaper without changing the name of the publishing company of the newspaper.

Turnover Analysis

Frequency of Turnover Outcomes

Table 9 reports the frequency of turnover outcomes for the 6 different positions. An observation was included if a position was occupied at the start of the year. Note that the editorial positions have more observations since twin newspapers typically yielded two observations for these positions, where they yielded at most one observation for the president and business positions.

As is apparent from table 9, job changes where an individual moved to another firm or another city are rare in our sample. Changes where the individual moved within the firm were more common. In our construction of the data it appeared to us that most of these job changes that involved moving within the firm or across firms were typically either lateral moves or promotions. Thus we treat these moves separately from turnover outcomes where the individual departed from the sample. The set of observations where an individual departed from the sample is likely to include most of the cases where the manager was dismissed for poor performance or where both parties realized that the individual was not a good match for the firm.

For each position and newspaper-year we created a dependent variable called LEAVE that takes a value of 1 for an observation where an individual departed from the sample in a given year and 0 otherwise. It is possible that some of these moves were promotions within the labor market that we were not successful in tracking. In particular, we may have missed moves by individuals to more prestigious positions at newspapers in cities not in the sample. This problem would be most severe near the end of the sample

since many cities that were not among the 50 largest in 1950 were large cities by the end of the sample period.

Given the low rate of job moves across the top 50 cities that we report in table 9, it would appear unlikely that this is a major problem. However, we did examine this possibility in greater detail for the years 1992 and 1993 by utilizing the fact that starting in 1993 the *International Yearbook* includes a comprehensive directory of individuals employed in the newspaper industry. We examined every observation where an individual departed from the sample during 1992 or 1993.⁴⁶ Of the 73 departures from the sample we were able to find 5 of these individuals at different newspapers not in our sample in the year following the departure. In 3 of these 5 cases the individual's new job was a similar job at a daily newspaper with a circulation that was 25% to 50% as large as the newspaper they leave. In 1 of the 5 cases the individual takes a similar job at a weekly newspaper with an average weekly circulation less than 10% of the average daily circulation of the newspaper he leaves. In the remaining case the individual leaves an advertising manager post at a newspaper with circulation of over 300,000 to become publisher of a daily newspaper with a circulation below 35,000. Based on this evidence we are confident that our dependent variable LEAVE picks up primarily cases where the individual leaves the industry or takes a less prestigious job within the firm or the industry.

46 To be consistent with our treatment below, we only examined cases where there was no control change or change in market structure during the city-year that the turnover event occurred.

Univariate Comparisons

In all of the statistical analysis below we exclude city-years where there was a change in market structure or a control change in the market during the year.⁴⁷ This is similar to the treatment of control changes in the top management turnover literature (Warner, Watts, and Wruck, 1988; Weisbach, 1988). It effectively excludes personnel changes that may be associated with external events and focuses on the internal turnover relationship under a normal operating environment.

In table 10 we report the difference in departure rates between competitive observations and monopoly observations. While for 5 of the 6 positions the competitive rate was higher than the monopoly rate, in no case is the difference statistically significant at even the 10% level using a simple t-test. A closer examination of the data reveals an upward trend over time in turnover rates for all of the positions over the sample period. As mentioned above, there has also been a downward trend over time in the number of competitive markets. These two trends together tend to work against uncovering a relationship between turnover and market structure. Since there are reasons for both of these trends that have little to do with the effect of market structure on job turnover, controlling for time effects is necessary.⁴⁸

47 We exclude all city-years where (a) the corporate ownership of a newspaper in the city changed, (b) a newspaper merger occurred, (c) a newspaper in the city ceased publication, or (d) a new newspaper began publication.

48 The upward trend in turnover rates over time is consistent with the findings of Hadlock and Lumer (1996) that top management turnover in industrial firms has increased significantly over time. Also, part of the increase in turnover may be attributed to increasing competition from alternative media sources such as television.

In a simple test that can mitigate time trend effects, we calculated for each position and year the difference in the departure rate for individuals in competitive markets and monopoly markets. If competition had no effect on turnover then each year this variable should be strictly positive with probability of approximately .5. We report in the third column of table 10 the number of years (out of 44 possible) that this variable is strictly positive. Additionally we report the significance levels for a two-sided binomial probability test that this variable is strictly positive with probability .5. For all 6 of the positions the turnover rate in competitive markets exceeded that in monopoly markets for more than half of the years. In 5 of the 6 cases the binomial test is significant at the 10% level or better and in 4 of the 6 cases at the 5% level or better. This test provides some evidence that turnover rates were higher in competitive markets.

Multivariate Analysis

The simple test in table 10 omits many possible factors that could affect turnover. In order to control for these factors, in this section we report results from logit regressions of the determinants of job turnover. These logit specifications are similar to the ones used in the CEO turnover literature (Warner, Watts, and Wruck; 1988, Weisbach, 1988). In all specifications we use the variable LEAVE as the dependent variable and include as independent variables a year term and a term for the individual's tenure as a top level manager as well as its squared value. We briefly describe here the other independent variables employed in the logit analysis.

Since the labor market history and opportunities of an employee may vary by the size of their employer, we include a variable related to the size of the newspaper. To eliminate any time trend in this measure, we utilize a variable called Relative Circulation.

This variable is defined to be the newspaper's average daily circulation in the year previous to the observation divided by the corresponding total daily circulation in the sample. As additional controls for potential variations in labor market opportunities, we include similarly normalized terms for both the population and the median income of the MSA of the city the newspaper was published in. Since there was a downward trend in the proportion of evening newspapers during the sample period that may have been relevant to quitting or firing decisions, we include a dummy variable that indicates if a newspaper published solely an evening edition in the given year. Finally, to account for the fact that large chains may have had a larger internal labor market or other potentially relevant differences, we include a variable for the number of different U.S. cities the chain owning the newspaper published in. This chain size variable is set equal to 1 for newspapers that are not owned by a chain.⁴⁹

The baseline results for the entire sample are reported in table 11. For all 6 positions the coefficient on the competition variable is positive and in 5 of the 6 cases it is significant at the 10% level or better. As expected, the year trend is positive and highly significant. Interestingly, the other control variables are much less uniform in sign or significance across the different positions. In fact, only the coefficient on the population

49 An additional control that may be relevant is the age of the employee. Unfortunately we do not have systematic data on this variable, although the tenure controls should partially pick up age effects. To make sure that large differences in the age of employees across product market environments do not drive all of the results we report below, we search the Editor and Publisher index from 1950-1961 for articles on the age of individuals who enter our sample (the index was discontinued after 1961). The age of individuals when they began serving in one of the 6 positions we examine appears to have been very similar in monopoly and competitive markets. In monopoly markets the average starting age for individuals was 45.2, while in competitive markets the average age was 44.4 (sample sizes of 16 and 44 respectively). Restricting these calculations to the non-president positions the monopoly average was 43.6 and the competitive average was 43.2 (sample sizes of 13 and 39 respectively).

variable has the same sign for all positions (positive), and the coefficient on this variable is only significant for a single position (circulation manager). The coefficient on the level of circulation variable is negative for all positions except the president, and significantly so for the circulation manager, managing editor, and sports editor. The tenure coefficients are less important than we expected. Ignoring the president position which has much lower turnover rates and is a special position in many ways, the data hint that turnover propensities decline in the first few years of an employee's tenure and then level off and perhaps increase after they have been with the firm for several years. However, this evidence is weak at best.

To gauge the magnitude of our findings, we report implied probabilities in table 11. For each set of estimates we make these calculations at the mean of the sample used to derive the estimates. The implied probability of turnover for an observation with these mean characteristics in both a monopoly environment and a competitive environment is reported. As can be seen from the table, the effect of competition on the implied probability of job turnover is substantial. For the 5 positions with a significant coefficient on the competition variable, the implied probability of a job turnover event increases by 27% or more when moving from a monopoly environment to a competitive environment. Most striking is the advertising manager, whose implied probability of turnover moving from a monopoly market to a competitive market increases by over 60%.

Taken as a whole, we view table 11 as providing strong evidence that there was a difference in the job turnover behavior of key personnel depending on whether they operated in a competitive environment or a monopoly environment. To further investigate, we note that it is possible that after individuals have worked for a firm for a

long time, there is very little uncertainty about the ability of the manager or the quality of the match between the manager and the firm. If this were the case, we might expect the differences between competitive and monopoly environments to be most pronounced for workers with relatively short tenures as senior level workers with their firm. Additionally, workers with shorter tenures are likely to be younger and their turnover behavior is less likely to be related to normal retirements.

To examine the turnover behavior of individuals with shorter tenures, we report in table 12 logit regressions for individuals whose tenure at the start of the observation year is less than 5 years.⁵⁰ The competition variable is positive but insignificant in the president regression. This is not surprising since there are relatively few observations in this subsample. Additionally, as outlined above, we are hesitant to put much weight on the president results since this is a special position in many ways. The coefficients on the competition variable for the five other positions are all positive and significant at the 5% level or better, and in 3 of these cases they are significant at the 1% level. In all 5 cases the estimated percentage increase in the implied probability of turnover moving from a monopoly environment to a competitive environment is larger than the corresponding figures estimated from the whole sample and reported in table 11. We interpret the results in table 12 from the low tenure subsamples as providing strong additional evidence that there is a relationship between competition and the management turnover in our sample.

⁵⁰ The choice of a five year cutoff was arbitrary. A nice feature of this cutoff is that for all positions except the president it divides the sample roughly in half. As discussed above, we define tenure as the number of years the individual served in any of the 16 recorded positions in any newspaper in the city.

Robustness Checks

The results reported in tables 5 and 6 are for what we consider to be the most reasonable and straightforward given the data available to us. However, to check the robustness of our findings we attempted several alterations of the basic specification and samples used above. To conserve on space these results are not reported in the tables. We describe briefly here the effect of these alterations on the results concerning competition.

Alternative specifications

We tried using individual year effects rather than a simple linear time trend. This alteration does not change the significance level on any of the competition coefficients. When we used probit analysis rather than logit analysis the results were virtually identical to what we report above. Finally, we used an alternative definition of tenure measured as the number of years the individual served in his current position with the current newspaper.⁵¹ Again the results on the competition variables are essentially unchanged.

Since our measure of the size of a chain is crude and we were concerned that newspapers in large chains managed their personnel decisions in a different manner than other newspapers, we attempted several alternative approaches. We created three different dummy variables intended to indicate large chains. These variables took a value of 1 when the firm was in a chain that had (a) newspapers in two or more cities in the sample, (b) newspapers in three or more cities in the sample, or (c) a presence in 13 or

⁵¹ We can only use this alternative definition of tenure for individuals who appear in the sample after 1950. For individuals in the sample as of 1950 we use the original definition of tenure which is the number of years in a major position (i.e. one of the original 16 recorded positions) in the city.

more cities anywhere in the U.S.⁵² When each of these dummy variables was used in place of the chain size variable used in tables 5 and 6, their coefficients were generally even less significant than the coefficients on chain size reported above. Additionally, in these alternative specifications the t-statistics on the competition coefficients were virtually unchanged. The only competition coefficient that is significant in one of the above tables and became insignificant was the coefficient on competition in the president regression for the entire sample. In that case for all three alterations of the chain size variable the competition coefficient fell to the 11% significance level, while in all three cases the new chain size variable was insignificant.

The size variables related to circulation and population used in tables 5 and 6 are based on the actual level of the relevant quantity. A case could be made that one should use measures based on the logarithm of these quantities rather than the level. This type of logarithmic transformation decreases the variation in these variables. When we replace the circulation measure with a corresponding measure based on the logarithm of circulation and rerun the regression in tables 5 and 6, the significance level of the coefficients on the competition variable are all unchanged from what we report above.

When we replace the population measure with a corresponding measure based on the logarithm of population and rerun the regressions in tables 5 and 6, the significance level of the competition coefficients decrease somewhat. For the regressions in table 11 which are run on the entire sample, the competition coefficients for the advertising manager and sports editor positions remain significantly positive at the 1% level. The

⁵² 13 was chosen as it was the 75th percentile cutoff for the chain size variable calculated over the entire sample of 4478 newspaper-years.

competition coefficient on the managing editor position falls in significance from the 5% level to the 10% level. The t-statistics on the competition coefficients for the circulation manager and president are no longer significant at conventional levels ($t=1.29$ and $t=1.43$ respectively), and the classified advertising manager coefficient remains insignificant as was the case in table 11. For the regressions in table 12 which are run on the low tenure subsamples, the results remain strong and similar to what we report above. All positions except the president have coefficients on the competition variable that are significantly positive at the 5% level or better.

The alteration of the construction of the population variable does not appear to increase the significance of population as a predictor of turnover. The coefficient on the population variable based on logarithms is insignificant in all cases except for the circulation manager position and the classified advertising manager.⁵³ Thus the alteration of the population variable appears to decrease slightly our ability to distinguish competition effects from population effects when examining the entire sample, but the case for the presence of population effects does not appear strong for any position except the circulation manager. Given that even with the alternative population variable the competition coefficient is significantly positive in 3 of the 6 cases for the entire sample, and more importantly that the results remain very significant for the low tenure subsample, our basic evidence that competition increases job turnover probabilities remains strong.

53 As in tables 5 and 6 the population coefficient in the circulation manager regressions is highly significant for the entire sample and for the low tenure subsample. Additionally, for the classified advertising manager the population coefficient based on logarithms is positive and significant at 10% level for the entire sample.

Alternative subsamples

While we have excluded city-years with control changes from the regressions, we are concerned that we still may be picking up some control changes.⁵⁴ Additionally, it is possible that our results are being driven by the president position. This could occur if a shake up at the top resulted in other senior managers and editors leaving or being forced out. To account for these possibilities, we rerun the regressions in tables 5 and 6 for the non-president positions where we exclude observations where the president departs from the firm during the year. The results on the competition coefficients change very little. All of the coefficients that were significant at the 10% level or above remain significant at the 10% level or better. Of these 9 coefficients 3 have t-statistics that increase slightly, and 6 have t-statistics that decrease slightly.

One possible explanation for our results is that managers are leaving competitive newspapers shortly before the newspaper ceases publication or is merged into a competitor. While we have excluded years where these types of changes in control or market structure occur, it could be that managers of competitive newspapers anticipate the change more than a year before it occurs. To examine this possibility we rerun all of the regressions in tables 5 and 6 on the subset of observations where there is no change in the number of independent competitors in the city during the year immediately following the observation year and during the year two years following the observation year. All of the competition coefficients in tables 5 and 6 that were significant at the 5% level or better

⁵⁴ If we include the observations that are excluded in tables 5 and 6 because of control changes, the results on the competition variable are generally stronger than what we report in tables 5 and 6, particularly for the business positions.

remain significant at the 5% level when the regressions are run on this restricted subset of observations. Of the two competition coefficients that were significant at the 10% level in table 11, the coefficient for the president position remains significant at the 10% level for this subset. The coefficient on the competition variable in table 11 for the circulation manager position is no longer significant at conventional levels ($t=1.40$) when the regression is run on this subset of observations. Taken as a whole, this evidence indicates that our basic results do not appear to be driven solely by turnover behavior surrounding major changes in market structure.

If newspapers with superior management tend to dominate competitors and eventually become monopolists, our results might simply reflect the fact that superior managers depart from their firms at comparatively low rates. To examine this possibility we construct subsamples of observations by eliminating all observations in the samples in tables 5 and 6 where the individual was a high level manager during the year that the newspaper became a monopoly.⁵⁵ When we run the regressions in tables 5 and 6 on the resulting subsamples, the results on the competition variables are very similar to what we report above. The only regression where there is a substantial change in the significance level of a coefficient on the competition variable is for the president regression. While the competition coefficient in table 11 for the president was significant at the 10% level, in the subsample where we eliminate presidents who were with the firm when it became a monopoly the coefficient is no longer significant ($t=.71$).⁵⁶ Again, the evidence here

⁵⁵ We define a high level manager to be a manager serving in any of the 16 originally recorded positions.

⁵⁶ Since presidents on average are with the firm much longer than individuals in the other positions, the criterion used to construct these subsamples eliminates more observations in the president regressions

suggests that our basic results do not appear to be driven solely by managers who hold high level positions when a newspaper becomes a monopolist.

Possible extensions of basic findings

Number of competitors. The definition of competition that we use assumes that there was a potential difference between markets with no independent newspapers and markets with 2 or more independent newspapers. Since over 72% of our observations on competitive newspapers are for markets with exactly 2 independent newspapers in a given year, further statistical distinction between markets with 2 independent newspapers and markets with 3 or 4 independent newspapers would appear difficult to make.⁵⁷ In an attempt to explore this possibility, we add to the regressions in tables 5 and 6 a binary variable that takes a value of 1 if the market had 3 or more independent newspapers in a given year and 0 otherwise. In no case is this variable significant at even the 10% level and the sign of the estimated coefficient is positive in 5 cases and negative in 7 cases. Thus our results appear to indicate a strong difference in turnover between competitive and monopoly environments, but little difference in turnover as the number of independent competitors increases.

Moves within the firm and industry. If competition generates information about an individual's performance, presumably this information could be used by the firm and the

than in any of the other regressions. Given that the sample decreases in size more for the president regression, the decrease in significance is not too surprising.

⁵⁷ The maximum number of independent newspapers in any city-year in our sample is 4. The 72% figure is calculated over the entire sample of 4478 newspaper-years.

labor market in redeploying or promoting the worker within the firm or the industry.⁵⁸ Thus it is possible that our competition variable also has explanatory power in logit regressions for the turnover outcomes where the individual switches jobs but does not depart from the firm or the industry. To explore this possibility, we created two additional binary dependent variables which we call MOVE1 and MOVE2. MOVE1 takes a value of 1 for observations where an individual moved within the firm, and MOVE2 takes a value of 1 for observations where an individual moved within the firm or to any other firm in the sample. As reported in table 9, these types of turnover outcomes were much less common than the outcome we used to construct our dependent variable LEAVE that is used above. When we used these additional dependent variables with the same independent variables and samples as in tables 5 and 6, the competition variable varied in sign across samples and positions. The competition variable was significant at the 10% level or better in only 4 of the 24 possible cases, and in all of those cases it was positive. Thus we have no compelling evidence that competition increases the propensity to be redeployed within the firm or the industry.

Performance Effects

The results we report above still leave unanswered the question of what is driving the results on the difference in the frequency in job turnover across product market environments. In particular, it would be informative to know if some of what we report is in fact related to the information based theories outlined in section 2. The empirical literature on relative performance evaluation for CEOs suggests some possible tests of

⁵⁸ Blackwell, Brickley, and Weisbach (1994) present evidence from the banking industry indicating that internal promotions for managers in their sample were related to measures of performance.

these theories. For example, Gibbons and Murphy (1990) find evidence that CEO turnover decreases when a firm has high stock returns (indicating good performance), but increases when a firm's industry counterparts have high stock returns (indicating poorer relative performance).

The difficulty in the current context is measuring performance. The only measure of performance for which we have data is the annual change in a newspaper's circulation. Since the individuals we examine are each only a small component of the firm, there may be little information content about an individual's performance contained in this aggregate performance measure.⁵⁹ This possibility, however, may not completely eliminate the importance of circulation performance as a predictor of job turnover. While it may be unclear exactly which key personnel are suboptimally matched with a newspaper when it does poorly, it could be that the realization of poor performance triggers the organization to restructure and part company with one or more key employees in an effort to try something new.

For each newspaper-year in the sample we calculate the annual change in daily circulation for the newspaper. The daily circulation figures reported in the *International Yearbook* are averages for a 6 month period ending on September 30th of each year. The personnel data we use for our dependent variables are accurate as of the late winter/early

⁵⁹ One could logically ask how competition could generate information about an individual's performance if this information is not reflected in a simple measure such as the annual percentage change in circulation relative to a competitor's annual change in circulation. This would be possible if simple measures such as circulation are very noisy indicators of more relevant information about an individual that is observable to the concerned parties. For example, it may be easily recognized that a newspaper's circulation manager is much less aggressive, efficient, or innovative than his/her counterpart across town.

spring of each year.⁶⁰ Thus turnover events that we record as having occurred in a given year, say 1960, actually occurred between some point early in 1960 and some point early in 1961. The circulation performance measure we use for these 1960 observations is the percentage change in circulation between the period ending September 30, 1959 and the period ending September 30, 1960. We call this measure, which captures a combination of contemporaneous and lagged performance, CHGCIRC.⁶¹ In the following analysis when we use CHGCIRC we exclude all city-years where there was a potential change in control or market structure at any newspaper in the city at any point in time between the endpoints over which the circulation figures are calculated.⁶² These excluded city-years are often ones where large changes in circulation occur because one newspaper in the market ceased publication or radically altered its product-market strategy.

Own performance effects

In results not reported here, we took the 12 regressions reported in tables 5 and 6 and added to each specification the variable CHGCIRC and a variable constructed by interacting CHGCIRC with the competition dummy variable. The sign on the interaction term varied across specifications and in all 12 cases the interaction term was insignificant at conventional levels. Since the variation in CHGCIRC for monopoly observations was

60 The exact cutoff date for the personnel data appears to have changed slightly over time.

61 For twin newspapers, CHGCIRC for the president and business positions is calculated based on the total circulation of the pair of newspapers, where for the editorial positions CHGCIRC is calculated based on each individual newspaper's circulation. When we use the twin circulation rather than the individual circulation for the editorial positions the results are very similar to what we report below.

62 We have excluded throughout city-years where a control change or market structure change occurred. The additional requirement imposed here further eliminates observations where a control change or market structure change occurred in the city in the year previous to the observation. CHGCIRC is set equal to a missing value for these observations.

smaller than for competitive observations, we repeated this procedure using an adjusted CHGCIRC for monopoly observations to reflect the fact that large changes in circulation for monopoly newspapers were relatively less likely than for competitive newspapers. The adjustment procedure we used was to multiply the CHGCIRC variable for monopoly observations by the ratio of the standard error of CHGCIRC for the competitive observations to the standard error of CHGCIRC for the monopoly observations.⁶³ When we repeated the regressions with this adjustment to CHGCIRC, the sign of the interaction coefficients remained insignificant in all 12 cases.

These findings provide no evidence that the sensitivity of job turnover to a newspaper's own performance differed between competitive and monopoly markets. This is important in that it casts doubt on the argument that all of our findings reported above are driven by differences in the importance of managers across product market environments. If quickly replacing suboptimal managers in monopoly markets was less important than replacing suboptimal managers in competitive markets, we would not expect to see similar turnover-performance sensitivities across these types of markets. Additionally, these results cast doubt on the conclusion that the own performance

63 For the president and business positions this ratio was 1.525 and was calculated over the entire sample of observations with non-missing CHGCIRC data where twin papers are treated as a single unit. For the editorial positions this ratio was 1.186 and was calculated over all observations with non-missing CHGCIRC data where each individual newspaper is treated as a separate unit. In addition to the adjustment reported, we experimented with additional adjustments to CHGCIRC to reflect our findings above in tables 5 and 6 that turnover in monopoly markets was less frequent. These findings coupled with equal CHGCIRC coefficients for monopoly and competitive markets would imply a larger absolute change in the probability of turnover for a given change in CHGCIRC in competitive markets relative to monopoly markets (but a smaller proportional change). If we further adjust CHGCIRC upwards for the monopoly observations by $[(\text{probability of competitive turnover}) (1 - \text{probability of competitive turnover})] / [(\text{probability of monopoly turnover}) (1 - \text{probability of monopoly turnover})]$ where the probabilities are taken from the implied probabilities reported in tables 5 and 6, we still find no significant coefficients on the interaction of competition with CHGCIRC.

evaluation (OPE) effects modeled by Hart (1983) and Scharfstein (1988) are the sole explanation for our results.⁶⁴

Given that the coefficients interacting CHGCIRC with the competition dummy were insignificant, we eliminated this interaction variable and ran all 12 regressions in tables 5 and 6 with CHGCIRC as the only additional independent variable. We do not report the resulting estimates in the tables, as the coefficients on CHGCIRC in these regressions were very similar in magnitude and statistical significance to the coefficients on CHGCIRC in regressions where we also included measures of a newspaper's competitors' performance. The actual estimates from these regressions that include competitors' performance are reported in table 13 and are discussed below.

Before turning to table 13, a couple of points from the regressions that modify the specifications in tables 5 and 6 by adding CHGCIRC as the only additional independent variable should be noted. First, whenever the coefficient on CHGCIRC was significant at the 10% level or better, it had a negative sign. Thus it appears that when performance is a significant predictor of turnover the relationship has the sign we would expect--poor performance leads to an increased probability of turnover. This finding helps confirm that our dependent variable is picking up job separations related to poor performance or poor employee-employer matches. Second, for both editorial positions and the classified advertising manager position the coefficient on CHGCIRC was small and insignificantly different from zero for both the entire sample and the low tenure subsample. For the

⁶⁴ An additional piece of evidence against the OPE theories is that our results hold for both the editorial and business positions. It is difficult to argue that for the editorial positions there is a dimension of performance that is affected by the performance of a competitor but for which the competitor's performance is not also observable.

editorial positions this finding is consistent with trade press articles indicating that newspapers often make attempts to insulate editorial departments from the business side of the newspaper. For the classified advertising manager this finding is consistent with this individual being a more junior manager relative to the other business positions we examine, and consequently being the one who is held least accountable for the newspaper's aggregate performance.

Relative performance effects

For each competitive newspaper-year we define a variable called Competitors' CHGCIRC to be the equally weighted average of the CHGCIRC variable for all competing newspaper's in the market.⁶⁵ Competitors' CHGCIRC is set equal to 0 for the monopoly newspapers. After constructing this variable we took the 12 regressions reported in tables 5 and 6 and added CHGCIRC and Competitors' CHGCIRC as additional independent variables. In 6 of these 12 cases the coefficient on CHGCIRC or Competitors' CHGCIRC variable was significant at the 10% level or higher. These 6 cases are reported in table 13 and include all cases where the CHGCIRC variable included alone was significant at the 10% level or better.⁶⁶ Thus we are confident that these cases are the only ones where there is any detectable relationship between turnover and performance as measured by changes in a newspaper's own circulation or its competitors' circulation.

⁶⁵ For all 6 positions in the calculation of Competitors' CHGCIRC a pair of twin newspapers is treated as a single newspaper.

⁶⁶ When CHGCIRC was included alone the coefficient was significant in all of the cases that it is significant in table 13 except for the advertising manager position with the low tenure subsample. When included alone the CHGCIRC coefficient was negative but not quite significant ($t=-1.57$), where the corresponding CHGCIRC coefficient in table 7 is significant at the 5% level.

All of the coefficients on CHGCIRC in table 13 are negative and in 4 of the 6 cases the coefficient is significant at the 5% level or better. The coefficients on Competitors' CHGCIRC in table 13 are all positive and in 4 of the 6 cases the estimated coefficient is significant at the 10% level or better. These coefficients on Competitors' CHGCIRC are consistent with what we would expect from the information based theories- good performance by competitors leads to an increased probability of turnover.⁶⁷

As can be seen in table 13, the inclusion of the competitors' performance variable does not substantially alter the positive estimated coefficients on the competition dummy variables. Thus, while we have some findings that are consistent with relative performance evaluation where performance is measured by changes in circulation, this does not appear to influence our main results on differences in turnover probabilities between competitive and monopoly markets. Whether these results are in fact driven by information based effects or differences in managerial inputs (or a combination of the two) across product market environments cannot be completely resolved with the data available to us. Given that we have (a) found no evidence for the managerial inputs story based on the sensitivity of turnover to a firm's own performance, and (b) that we have uncovered some evidence that is consistent with relative performance evaluation, it appears likely that information effects are at least part of the story behind our findings.

⁶⁷ If we rerun the regressions reported in table 13 restricted to subsamples of competitive newspapers the coefficients and significance levels on CHGCIRC and Competitors' CHGCIRC are similar to what we report in the table. The only substantive difference is that the t-statistic on Competitors' CHGCIRC in the circulation manager regression for the entire sample falls slightly from 1.70 to 1.52.

Conclusion

A large theoretical literature dating back to Hicks (1935) has considered the possibility that product market competition plays a role in the relationship between a firm and its managers. Using a unique data set from the U.S. newspaper industry over the 1950-1993 time period, we provide evidence that is consistent with the existence of a relationship between competition and managerial contracting. Our principal empirical finding is that there was significantly more job turnover for key managerial positions in competitive markets than in monopolistic markets. When we examine the sensitivity of turnover to performance we find that there was not a significant difference across product market environments in the sensitivity of job turnover to a newspaper's own performance. However, we do uncover some evidence that job turnover was sensitive to a newspaper's competitors' performance in a manner consistent with relative performance evaluation (RPE).

Given the structure of the industry and data in our sample, we argue that it is unlikely that our results are driven principally by strategic considerations. The results do appear to be consistent with two other hypotheses that have been advanced in the theoretical literature. The first of these is that competition generates information that is relevant in evaluating managerial effort, managerial ability, or the quality of the employee-employer match. The second is that the importance of managerial inputs varies across product market environments, a possibility that we label the managerial technology hypothesis. Given our findings on the sensitivity of turnover to a newspaper's own performance and to its competitors' performance, it appears likely that our results are not

solely driven by the managerial technology story and thus are at least partially driven by information based explanations.

There are several important economic issues for which these results are potentially relevant. Antitrust and regulatory policy decisions frequently affect the competitiveness of various product markets. The results here suggest that an important consequence of changing the nature of product market competition is its impact on managerial contracting. In addition, our results provide some indirect evidence that may be relevant to the debate on how to interpret the relatively weak management incentives observed in regulated firms. One explanation for these weak incentives is that they are driven by the political nature of the regulatory process which constrains the set of feasible contracts. Another explanation is that they are driven by the special characteristics of the job of managing a regulated enterprise. One of these special characteristics is the lack of competition. Our findings may provide some support for the latter explanation in that we are uncovering differences between non-competitive and competitive environments that are similar to previously reported differences between regulated and unregulated environments.

In our view the most interesting and important implication of our results is that they provide evidence consistent with product market considerations playing a role in the solution to the typical agency problem that characterizes owner-manager relationships. There are large empirical and theoretical literatures that attempt to understand the interactions between owners and managers, and there is a common presumption that product market considerations can help alleviate the basic incentive problems that arise. However, identifying empirically product market effects in managerial contracting has

been difficult as it requires identifying suitable variations in product market competition. While the results we report above leave several questions unanswered, they suggest the importance of considering the product market environment in issues related to managerial contracting and incentives. Sorting out the exact role the product market plays in incentives across organizational forms from the CEO level downwards is clearly an important area for future research.

Table 7: Characteristics of Entire Sample

Number of newspaper-years	4478
Number of city-years	2200
Competitive newspaper-years (% of total)	48.4
City-years with competing newspapers (%)	37.9
Cities with competing newspapers in 1950 (%)	66.0
Cities with competing newspapers in 1970 (%)	40.0
Cities with competing newspapers in 1990 (%)	16.0
City-years where a change in control or market structure occurred (%)	5.7
Monopoly newspapers with twins (%)	81.7
Competitive newspapers with twins (%)	28.5
Newspapers held by publicly traded firm (%)	13.0
Newspapers in chains (%)	66.5
Average chain size	12.25
Evening newspapers (%)	46.9
Evening newspaper (%) (twin units)	26.3
Average daily circulation	259,631
Average daily circulation (twin units)	359,026
Average MSA population	2,281,046
Average CHGCIRC (%)	-.003
Average CHGCIRC (%) (twin units)	.070

Note.-The sample is composed of daily newspapers published anytime during the 1950-1993 time period in the 50 largest U.S. cities as of 1950. The chief source of data for the sample was the *Editor and Publisher International Yearbook*. A pair of newspapers in a city are considered to have been twins if they were commonly owned or managed. A city is considered to have been competitive if there were two or more non-twin newspapers in the market at the start of the year. A city-year is considered to have had a change in control or market structure if there was any recorded instance of an ownership change, merger, entry, or exit occurring during the year. All figures in the table are calculated over the entire set of individual newspaper-years or city-years except for those denoted as twin units calculations. The twin units calculations are made over the entire sample where we treated a pair of twin newspapers in any year as a single newspaper and summed their characteristics together to arrive at a single number for the pair. For the twin units calculations a pair of twin newspapers was considered an evening newspaper if neither

newspaper in the pair published a morning edition. A newspaper was considered to have been owned by a chain if it was owned by a corporate entity that held newspapers in two or more U.S. cities. The chain size variable is the number of U.S. cities where the chain published newspapers and the reported figure is calculated over the set of newspaper-years where a newspaper was owned by a chain. The MSA population figures each year are calculated by interpolating figures from the U.S. census. The CHGCIRC variable is the annual change in the average daily circulation between the six-month period ending the September 30th before the observation year and the six-month period ending the September 30th of the observation year expressed as a percentage.

Table 8: Reporting Frequencies

	Fraction of non-twin newspapers where position is not vacant	Fraction of twin pairs where position is vacant for both newspapers	Fraction of twin pairs where single individual reported for the position	Fraction of twin pairs where two individuals reported for the position
President	.867	.067	.799	.134
Circulation Manager	.969	.026	.784	.191
Advertising Manager	.870	.065	.824	.112
Classified Advertising Manager	.934	.031	.867	.102
Managing Editor	.893	.016	.207	.777
Sports Editor	.952	.011	.188	.801

Note.- A position is considered to have been vacant for an observation if there was no individual reported as serving in the position at the start of the observation year by the Editor and Publisher International Yearbook. For the calculations concerning twins each pair of twin newspapers is treated as a single unit. All observations in the sample are used in the calculations in this table.

Table 9: Frequency of Turnover Outcome by Position

	President	Circulation Manager	Advertising Manager	Classified Advertising Manager	Managing Editor	Sports Editor
No job change	91.59	85.60	84.07	84.49	83.97	88.43
Departs from sample	6.67	12.64	12.98	12.83	10.69	10.24
Moves within firm- same city	2.74	0.99	2.32	2.23	5.04	1.07
Moves within firm- different city	0.15	0.16	0.07	0.07	0.15	0.00
Moves to different firm- same city	0.03	0.13	0.03	0.03	0.03	0.05
Moves to different firm- different city	0.10	0.48	0.52	0.36	0.13	0.22
Number of observations	2878	3132	2888	3056	3968	4121

Note.- All figures are expressed as a percentage of the number of observations where the designated position is reported as occupied at the beginning of the year. For the president, advertising, classified advertising, and circulation positions, a pair of twin newspapers is treated as a single unit. For these positions, in the few instances where there are two individuals serving in the same capacity for a pair of twins, the job movements of the individual with the shorter market tenure between the two are excluded from the sample calculations. For the managing editor and sports editor positions both newspapers in any pair of twins are treated as separate units and the job movements of these editors for both newspapers are included in the sample calculations.

Table 10: Departure Rate by Competitive Status of Market

	Monopoly market departure rate	Competitive market departure rate	Number of years where competitive rate strictly exceeded monopoly rate (out of 44 possible)
President	.079	.082	28*
Circulation manager	.111	.129	29**
Advertising manager	.117	.140	34***
Classified manager	.110	.124	29**
Managing editor	.107	.104	26
Sports editor	.099	.110	30**

Note.- The figures reported in the first two columns are the fraction of observations where the binary variable LEAVE equals 1, where LEAVE is defined to take a value of 1 when an individual leaves his job with a newspaper and does not take another reported job elsewhere in the sample. Departure rates in this table are calculated over the set of newspaper-years where no change in control or market structure occurred during the observation year in the city the newspaper was published in. In the construction of LEAVE, the president, advertising, classified advertising, and circulation positions, a pair of twin newspapers is treated as a single unit. For these positions, in the few instances where there are two individuals serving in the same capacity for a pair of twins, the job movements of the individual with the shorter market tenure between the two are excluded. For the managing editor and sports editor positions both newspapers in any pair of twins are treated as separate units and the job movements of these editors for both newspapers are included in the construction of LEAVE. For all positions a competitive market is one where two or more independent (i.e. non-twin) newspapers were published during the year. The sample runs from the start of 1950 to the end of 1993 representing 44 years. The statistical significance levels are for a symmetric two-tailed test that the binomial variable that takes a value of 1 when the competitive rate exceeds the monopoly rate in a given year and 0 otherwise takes a value of 1 with probability .5.

* Significant at the 10% level.

** Significant at the 5% level

*** Significant at the 1% level

Table 11: Logit Estimates for Management Departures by Position

	President	Circulation Manager	Advertising Manager	Classified Manager	Managing Editor	Sports Editor
COMPETE	.365* (.208)	.274* (.141)	.538*** (.151)	.168 (.146)	.280** (.128)	.447*** (.127)
Year	.034*** (.008)	.028*** (.005)	.035*** (.006)	.024*** (.006)	.027*** (.005)	.030*** (.005)
Tenure	.018 (.022)	-.004 (.018)	-.016 (.024)	-.058*** (.022)	.006 (.021)	-.020 (.015)
Tenure * Tenure	-.0011* (.0006)	.0004 (.0006)	.0020** (.0010)	.0026*** (.0008)	.0006 (.0008)	.0006 (.0004)
Relative Circulation	7.69 (11.47)	-17.53** (8.43)	-5.97 (8.94)	-3.09 (8.62)	-22.18** (10.07)	-17.62* (9.85)
Relative MSA population	.156 (4.42)	8.91*** (2.99)	1.61 (3.26)	4.33 (3.19)	3.84 (3.17)	1.93 (3.18)
Relative MSA income	12.19 (37.61)	1.30 (27.25)	-20.06 (28.70)	-7.45 (27.99)	10.11 (26.14)	21.91 (25.52)
Evening paper dummy	.134 (.218)	.104 (.145)	-.043 (.153)	.409*** (.146)	-.018 (.113)	.067 (.112)
Chain Size	.0099 (.0062)	.0025 (.0053)	.0103** (.0053)	-.0020 (.0058)	.0074* (.0042)	.0039 (.0043)
Constant	-4.07*** (.81)	-2.80*** (.57)	-2.67*** (.59)	-2.49*** (.59)	-3.08*** (.54)	-3.29*** (.53)
Log likelihood	-575.71	-1059.31	-994.39	-1013.45	-1235.02	-1269.40
Predicted Prob. LEAVE=1- monopoly	.0503	.0985	.0834	.0900	.0865	.0772
Predicted Prob. LEAVE=1- competitive	.0710	.1257	.1349	.1047	.1113	.1156
Number of observations	2698	2934	2712	2864	3749	3892

Note.- Asymptotic standard errors in parentheses. The dependent variable in these regressions is the binary variable LEAVE defined as in table 10. The sample in the regressions is restricted to the set of newspaper-years where no change in control or market structure occurred during the observation year. The treatment of twins in the construction of LEAVE is the same as in table 10. The COMPETE variable is set equal to 1 if the market has two or more independent papers in the observation year. The year term is set equal to 0 for 1950 and increases in increments of 1 each year. Tenure is defined as the number of

years the individual served in any of the 16 initially recorded positions anywhere in the city. Relative Circulation is defined as the newspaper's average daily circulation in the year previous to the observation divided by the total daily circulation of all newspapers in the sample that year. For the president, advertising, classified advertising, and circulation positions, a pair of twin newspapers is treated as a single unit in calculating a newspaper's circulation to construct Relative Circulation. For the two editorial positions each of the two newspapers in a pair of twins are treated separately in the construction of Relative Circulation. Relative MSA population (income) for a given city-year is the population (median income) of the MSA the city lies in divided by the sum of all MSA populations (median incomes) of the 50 sample cities. For non-twin newspapers the evening dummy variable takes a value of 1 if the newspaper publishes solely an evening edition. For the president, advertising, classified advertising, and circulation positions, the evening paper dummy variable for twins takes a value of 1 when neither of the two newspapers publishes a morning edition. For the two editorial positions the evening dummy variable for twins takes a value of 1 if the individual newspaper the editor works for publishes solely an evening edition. For chain owned newspapers the chain size variable is defined as in table 7 and for newspapers not owned by a chain this variable is set equal to 1. *Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

Table 12: Logit Estimates for Management Departures- Tenure Less Than 5 Years

	President	Circulation Manager	Advertising Manager	Classified Manager	Managing Editor	Sports Editor
COMPETE	.117 (.341)	.572*** (.204)	.556*** (.206)	.457** (.199)	.467** (.183)	.532*** (.183)
Year	.022* (.013)	.036*** (.008)	.025*** (.008)	.024*** (.008)	.024*** (.008)	.034*** (.008)
Tenure	.048 (.315)	.151 (.199)	.011 (.196)	-.236 (.192)	.450** (.195)	.251 (.188)
Tenure * Tenure	.006 (.078)	-.027 (.050)	.010 (.049)	.059 (.049)	-.079* (.047)	-.064 (.048)
Relative Circulation	4.57 (17.27)	-22.73** (11.48)	-23.60* (12.41)	-18.30 (11.63)	-18.68 (13.98)	-43.39*** (16.02)
Relative MSA population	3.66 (6.01)	9.48** (3.80)	5.51 (4.23)	6.56 (4.26)	1.00 (4.44)	4.24 (4.99)
Relative MSA income	51.79 (60.11)	-9.60 (37.83)	-9.15 (38.61)	-49.48 (37.15)	-5.51 (36.66)	49.82 (36.76)
Evening paper dummy	.372 (.354)	.033 (.210)	-.049 (.213)	.455** (.202)	-.118 (.163)	-.048 (.167)
Chain Size	.020** (.008)	.003 (.008)	.018*** (.007)	.004 (.008)	.012** (.005)	.010* (.005)
Constant	-4.71*** (1.30)	-2.98*** (.80)	-2.65*** (.80)	-1.71** (.79)	-3.12*** (.76)	-3.89*** (.78)
Log likelihood	-219.58	-500.70	-516.09	-523.15	-598.41	-572.67
Predicted Probability LEAVE=1- mon	.0679	.0970	.0901	.0863	.0916	.1016
Predicted Probabability LEAVE=1- comp	.0757	.1599	.1473	.1299	.1375	.1616
Number of observations	817	1329	1390	1408	1844	1584

Note.- Asymptotic standard errors in parentheses. All variables are the same as in table 11 and the dependent variable is LEAVE. For each position the regression reported in this table is restricted to the set of observations where the individual in the position had a tenure of less than 5 years at the beginning of the observation year.

*Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

Table 13: Logit Estimates Including Performance Measures

	Position (Observations Used)					
	President (ALL)	Circulation Manager (ALL)	Circulation Manager (TENURE<5)	Advertising Manager (ALL)	Advertising Manager (TENURE<5)	Managing Editor (ALL)
COMPETE	.407 [*] (.231)	.285 [*] (.158)	.667 ^{***} (.249)	.564 ^{***} (.175)	.656 ^{**} (.259)	.179 (.140)
CHGCIRC	-5.16 ^{**} (2.41)	-6.41 ^{***} (1.68)	-5.10 ^{**} (2.19)	-2.21 (1.72)	-4.39 ^{**} (2.21)	-.37 (1.40)
Competitors' CHGCIRC	.26 (3.04)	3.45 [*] (2.03)	1.37 (3.12)	5.65 ^{**} (2.18)	6.75 ^{**} (2.73)	3.96 [*] (2.04)
Year	.032 ^{***} (.009)	.026 ^{***} (.006)	.039 ^{***} (.010)	.035 ^{***} (.007)	.020 ^{**} (.010)	.025 ^{***} (.006)
Tenure	.004 (.026)	-.018 (.022)	-.473 (.498)	-.037 (.030)	-.305 (.496)	-.024 (.024)
Tenure * Tenure	-.0009 (.0006)	.0007 (.0006)	.095 (.100)	.0026 ^{**} (.0011)	.055 (.100)	.0016 [*] (.0008)
Relative Circulation	19.52 (13.67)	-19.47 ^{**} (9.82)	-28.06 [*] (14.74)	4.04 (10.26)	-6.59 (14.69)	-18.19 [*] (10.50)
Relative MSA population	-6.55 (5.91)	8.32 ^{**} (3.65)	10.19 ^{**} (4.98)	-1.09 (4.06)	.95 (5.73)	5.19 (3.42)
Relative MSA income	-4.82 (41.33)	1.85 (30.42)	-51.25 (45.47)	-14.75 (32.31)	-11.20 (46.42)	25.32 (28.13)
Evening paper dummy	.144 (.242)	.066 (.161)	.080 (.248)	-.083 (.174)	-.086 (.259)	-.069 (.123)
Chain Size	.006 (.008)	-.001 (.006)	-.007 (.011)	.010 (.006)	.018 ^{**} (.009)	.010 ^{**} (.005)
Constant	-3.60 ^{***} (.88)	-2.62 ^{***} (.63)	-1.51 (1.07)	-2.78 ^{***} (.67)	-2.26 ^{**} (1.08)	-3.19 ^{***} (.58)
Log likelihood	-477.36	-867.97	-345.34	-787.94	-353.49	-1050.50
Number of observations	2347	2429	913	2194	951	3095

Note.- Asymptotic standard errors in parentheses. All variables are defined as in table 10 and the dependent variable is LEAVE. The ALL sample is the sample of all valid observations and the TENURE<5 subsample is the set of valid observations where the individual's tenure at the start of the observation year was less than 5 years. The CHGCIRC variable is the annual change in the average daily circulation between the six-month period ending the September 30th before the observation year and the six-month period ending the September 30th of the observation year expressed in decimal form. For the president, advertising, and circulation positions, a pair of twin newspapers is treated as a single unit in calculating CHGCIRC. For the managing editor position each of the two newspapers in a pair of twins is treated separately when calculating CHGCIRC. Competitors' CHGCIRC is defined to be the equally weighted average of the CHGCIRC of a newspaper's competitors in the market, where a pair of twin newspapers is treated as a single newspaper in the calculation of Competitors' CHGCIRC for all 6 positions. For monopoly newspapers Competitors' CHGCIRC is set equal to 0. In these regressions observations are excluded if there was a change in market structure or control anywhere in the city over the window of time the circulation figures in the calculation of CHGCIRC are derived from.

*Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

CHAPTER 5 CONCLUSION

This dissertation finds evidence in support of two strands of the theoretical literature on financial contracting in closely held firms. In the context of the motion picture industry, it finds evidence that entrepreneurs consider potential hold-up costs when choosing financing. In the context of the newspaper industry, it finds evidence that product market competition may serve a disciplinary role in firms where other governance mechanisms are weak.

APPENDIX A “NET PROFIT” ACCOUNTING

I discuss here the specifics of Hollywood accounting and explain why most films rarely reach positive levels of Net Profits. “Net Profits” is an industry-specific contractual term and does not necessarily correspond with economic profitability. The term “Net Profit,” as well as other contractual terms, will be capitalized in the forthcoming analysis to keep this distinction clear.

For studio-financed films, the producer is generally entitled to a share, usually 50 percent, of Net Profit (if positive). As mentioned in Section I, only about 5 to 20 percent of all studio-distributed films ever satisfy Hollywood accounting definitions of profitability. For this reason, a producer generally views her compensation as fixed for all practical purposes. Although industry critics view the low level of profit sharing as evidence of studio malpractice, an alternative hypothesis is that studios are in a better position to bear the financial risk of the project than are producers.

Table 6 presents an estimated Net Profit (Loss) calculation for a hypothetical 1992 production. The domestic box-office performance figures are drawn from the *Compact Variety* CD-ROM. Average print, advertising, and production costs are drawn from the Motion Picture Association of America (MPAA) electronic publication, “1997 US Economic Review: Theatrical Data.” All other figures are my estimates, based upon my

reading of industry sources.⁶⁸ Although the example represents a studio-financed film, I will afterward indicate how the contractual terms for an independently-financed film might differ.

A film's Net Profit is calculated by subtracting Distribution Fees, Distribution Expenses, and Production (Negative) Costs from Gross Receipts. I will explain the meaning and calculation of these terms as I come to them in the example. It is in how these terms are defined that Net Profit deviates from economic profitability. The areas which most contribute to this deviation are Distribution Fees, the treatment of Home Video Sales, and Overhead and Interest charges.

The domestic theatrical market provides the film project with its earliest revenues. The hypothetical film has Domestic Box Office Receipts of \$41,300,000. This figure is the average box office performance of an MPAA studio production in my sample. This figure differs from the figures reported in Table 2 because it contains only films financed by MPAA studios. I use this figure to keep costs and receipts on a comparable basis.⁶⁹ A common rule-of-thumb is that exhibitors (theaters) keep about 50% of the box office gate. The 50% figure is an average over the course of a film's run, with the theater keeping a smaller share early in the run and a larger one later on.⁷⁰ Using this rule-of-

⁶⁸ I draw heavily on Vogel (1998), chapter 4, for the framework of my example. Other important sources include Cones (1992), Litwak (1994), Squire (1992), and Weinstein (1997).

⁶⁹ If anything, I am overstating box office receipts by not including films distributed but not financed by MPAA studios. The average box-office performance of the entire group of MPAA studio releases in my sample is only \$35,200,000.

⁷⁰ A common arrangement for the first weeks of exhibition is a 90/10 split of any revenues above the theater's "nut," or cost of exhibition. The cost figures are negotiated and generally include a profit margin for the exhibitor.

thumb, I estimate that the Domestic Theatrical Rentals (the portion of box office accruing to the production) of my production is \$20,650,000.

Total Gross Receipts includes Domestic Theatrical Rentals along with ancillary revenues. I group the ancillary revenue sources into three categories: Foreign Theatrical Rentals, Home Video, and Other (including pay television, free television, merchandising, etc.) I assume that the Foreign Theatrical Rentals and Other categories each are equal to 50% of Domestic Theatrical Rentals. Of course, actual revenues from these sources vary substantially by film. Action films, for example, are generally better received abroad than are comedies.

Home video is quite possibly a studio's most important profit center. The reason home video rights are highly valued by studios is how home video receipts are allocated. Usually only 20% of Home Video Sales by a studio are allocated to the production as Home Video Royalties, the other 80% accruing to the distributor (often through a subsidiary). In general, the actual home video distribution costs incurred by the studio are well below the 80% level. In addition, as will be discussed later, the studio generally charges an additional distribution fee (usually 30%) on the Home Video Royalties. For these reasons, home video revenues are greatly underrepresented in a film's Net Profits. In my example, although total Home Video Sales are equal to the total Domestic Box Office Performance of \$41,300,000, Home Video Royalties are only \$8,260,000. This brings Total Gross Receipts to \$49,560,000.

The next section in Table 6 deals with Distribution Fees and Expenses. Distribution Expenses include the costs of prints, advertising, and any other direct expenses incurred in the marketing and distribution of the film. Distribution Fees are

additional charges levied by the studio. The said purpose of Distribution Fees is to cover any overhead costs of distribution which cannot be allocated to any one given film. These fees are charged as a percentage of a film's receipts, varying by revenue source. The typical rate is 30% of Domestic Receipts, 40% of Foreign Receipts, and 15% of Other Receipts. Industry critics allege that these fees are in excess of a studio's true overhead. Another controversy is that, since Distribution Fees are based on a percentage of Receipts, higher grossing movies subsidize the distribution of lower grossing ones.

For the hypothetical film, I assume a straight 30% distribution fee on Gross Receipts. The largest component of Distribution Expenses is Advertising, which averaged \$11,485,000 in 1992 (rounded to \$11,490,000 in the example). The cost of prints averaged \$1,971,000 (rounded to \$1,970,000). I assume all other direct expenses equaled 25% of combined Prints and Advertising Costs.

Finally deducted are Production Costs, also called Negative Costs. I assume the hypothetical film's Production Costs equal those of the average 1992 MPAA production (\$28,858,300 rounded to \$28,860,000). I assume that this figure includes an overhead charge of \$3,000,000.⁷¹ Added to these costs are interest expenses, computed at some percentage above prime. I use a figure of \$3,000,000 in the example. Also deducted from Net Profit is any Participation given to talent. These arrangements, better than those afforded producers, are generally reserved for only a handful of the most sought after actors and directors. In my example, I assume that cast participations equal 10 percent of

⁷¹ This figure is at the lower end of the 10 to 25 percent range which Cones (1992) says is typical.

Gross Receipts less Distribution Fees and Expenses, or \$1,790,000. The bottom line for the hypothetical film is then a Net Loss of \$15,783,000.

An area of controversy is that overhead is often charged on the amount of cast participations in addition to direct production costs. Interest is then charged on that overhead. Also controversial is the fact that the studio not only receives interest on the funds it provides but also takes a profit participation. As related in Litwak (1994), interest charges were one area of contention in Art Buchwald's suit of Paramount over the film *Coming to America*. *Coming to America* reportedly earned \$140 million in Gross Receipts and was one of the top 20 highest grossing films of the 1980's. Yet according to distributor Paramount's accounting, the film lost \$15 million. Buchwald claimed that the amount spent on actual production was only \$23 million. Paramount's estimate of Production Costs was \$63 million.

Given the analysis above, a logical question is how investors in independently financed films ever get repaid. The answer is that the contracts for independently financed films differ in important ways from those for studio financed ones. First, independent producers can often negotiate lower Distribution Fees. Additionally, independent producers are able to sell video rights for closer to their true value. Finally, independent productions avoid studio overhead charges. These differences greatly improve the probability that an independently financed film will earn a positive Net Profit. Note however that for an independent production a producer's compensation is still predominantly fixed. Most of any Net Profits accrue to investors, rather than to her. Pre-sales of ancillary rights further limit producer upside participation.

APPENDIX B DESCRIPTION OF NEWSPAPER MANAGEMENT POSITIONS

The following descriptions of newspaper positions are based on our of the weekly trade publication *Editor and Publisher* over the sample period as well as several books concerning management practices in the newspaper industry. These books included Thayer (1954), Williams (1978), Udell (1978), Compaine (1980), Carter and Cullen (1983), Rankin (1986), and Willis (1988). There is some heterogeneity in how newspapers are organized at the top management level, but all of the positions we examine in the analysis above except for the president position have well defined roles that appear uniform across time and newspapers. After we describe the positions, we briefly discuss their relative ranks within the newspaper.

President and Top Management. The president is the highest ranking officer of the newspaper and is typically responsible for the direction of the newspaper and its long term strategy. Rankin (1986, p.27) explains that the president may function as the CEO of the newspaper. The publisher is directly below the president in the chain of command and he/she is usually the operating director of the newspaper, similar to a Chief Operating Officer. In our sample when a newspaper reports both a president and a publisher they are usually the same individual (true for about 65% of all observations). The president position is reported more frequently than the publisher position. In some cases the president or publisher is the individual owning the newspaper. Sometimes the president or

publisher hires a general manager who actually runs the entire newspaper or a business manager who runs the business side of the newspaper.⁷²

Advertising manager or director. The advertising manager supervises the entire advertising department including national, local, and classified advertising. The advertising department accounts for approximately 80% of a typical newspaper's revenues and is generally considered the most important business department of the newspaper. As reported by Willis (1988, p.26), the advertising department of large daily newspapers averaged 138 full time and 17 part time employees representing 21% of salary expenses in a 1986 study. The advertising manager organizes the advertising sales staff and is constantly on the alert for new accounts. The advertising manager's duties include supervising copywriters, artists, telephone solicitors, special representatives, research directors, interviewers, and clerks. The advertising manager makes decisions on pay, staffing, sales techniques, and strategy. Generally this individual has risen through the ranks of the advertising department after many years of service. This manager reports to top management- either the business manager, general manager, publisher or president.

Classified Advertising manager or director. This individual supervises the classified advertising department of the newspaper. Classified advertising typically accounts for 25-40% of all advertising revenues of large daily newspapers and an even larger fraction of the profits from advertising activities. Additionally, classified advertising is an important determinant of circulation. The classified advertising manager supervises

⁷² The publisher, general manager, and business manager position are included in the set of 16 recorded positions.

the efforts of street, correspondence, and telephone salespeople and reports to the advertising manager.

Circulation manager or director. The circulation manager supervises the circulation department which is responsible for distribution, delivery, circulation campaigns, promotion, collection, and some public relations. Circulation typically generates 20% of a newspaper's revenues, but is also a major determinant of demand for advertising space. As reported by Willis (1988, p.26), a 1986 study of large daily newspapers indicated that the circulation department averaged 191 full time and 159 part time employees accounting for 31% of salary expense. Knowledge of variations in local market demand can be important to maximize sales and minimize the number of unsold newspapers. The circulation manager supervises a team of assistant and district managers, solicitors, carriers, supervisors, collectors, truck drivers and also makes decisions on credit policies to vendors. Generally this individual has risen through the ranks of the circulation department after many years of service and a stint as a district circulation manager. This individual reports to top management- either the business manager, general manager, publisher, or president

Managing Editor. The managing editor is the individual who manages the news-editorial staff and is generally the highest ranking officer involved in the daily production processes of the newspaper (Carter and Cullen, p.49). The news-editorial department of large daily newspapers averaged 130 full time and 16 part time employees accounting for approximately 28% of total salary expenses in the 1986 study cited by Willis (1988, p.26). The managing editor ensures proper facilities, equipment, and personnel are available for gathering news and handling features. Additionally he/she supervises and deploys

assistant managing editors, department editors (graphic, business, sports, city, features, news, and photo), and reporters. Typically this individual is a former newsroom staff member who has risen through the ranks to the assistant managing editor position and then the managing editor position. Sometimes the managing editor is the chief news executive of the newspaper and sometimes he reports to either an editor-in-chief or an executive editor who would then function as the chief news executive. If a large daily newspaper firm has an editor-in-chief, that individual usually has little direct involvement with day-to-day operations. The chief news executive reports directly to the publisher or president.

Sports Editor. This individual is responsible for the gathering and presentation of news, features, local columns, and box scores presented in the sports pages. In large cities such as those in our sample, the sports staffs are a substantial part of the total news-editorial staff. A 1978 survey of large daily newspapers reported that the typical large daily devoted 10-20% of all news space to the sports section [Editor and Publisher, 3/18/78, p.13]. The average sports staff of the surveyed newspapers was 14.7 full time and up to 12 part time employees. The sports editor supervises a team of editors and reporters and is responsible for hiring, firing, promotion, planning a budget, and some public relations. This individual typically has risen from an assistant sports editor or reporter position and reports to the managing editor or one of his/her subordinates.

Seniority and stature of positions. The president is the most senior position we examine and the sports editor and the classified advertising manager are clearly the most junior positions we examine. The advertising manager, managing editor, and circulation manager are of similar stature in that they manage large and important departments,

though our reading indicates that the circulation manager is generally considered the least prestigious position of these three. Willis (1988, p.22) cites a 1985 study of a sample of small, medium, and large newspapers indicating that the average managing editor earns 11.5% more than the circulation manager and the advertising manager earns 26.2% more than the circulation manager. To gauge the general level of these positions we note that Willis (1988, p.22) cites a study that the average managing editor of a large daily newspaper earned \$82,429 in 1987.

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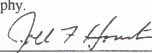
BIOGRAPHICAL SKETCH

C. Edward Fee IV received his BA in economics from the University of Michigan in 1988 and his MBA in finance from Tulane University in 1990.

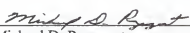
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Christopher M. James, Chairman
William H. Dial/Sunbank Eminent Scholar
of Banking and Finance

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


Joel F. Houston
Associate Professor of Finance,
Insurance, and Real Estate

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

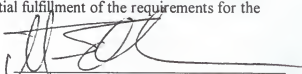

Michael D. Ryngaert
William Emerson/Merrill Lynch Associate
Professor of Finance, Insurance, and
Real Estate

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


Tracy R. Lewis
James W. Walter Eminent Scholar in
Entrepreneurship

This thesis was submitted to the Graduate Faculty of the Department of Finance, Insurance, and Real Estate in the Warrington College of Business Administration and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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Dean, Graduate School